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THE PSYCHOLOGY OF SUPERIOR CHILDREN*

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TABLE OF CONTENTS

Introduction 209
Who is Superior? 211
I. The Classification of Superior Children 214
The Academic Achievements of Superior Children . . 216
Summary 221
II. Special Study of Seventy Individual Cases 222
Selection of Cases 222
Method of Study of Cases 225
Special Talents- 229
Social Effectiveness 231
The Problem Group 232
III. Biographies of Famous Men and Women 237
IV. Conclusions 240
Appendices 243
Bibliography 245

Introduction

Both psychologically and educationally, the superior child is a complex problem. The fact that school systems are made to the measure of the average child makes them a poor fit for the superior. When the superior child's development is itself onesided, as it very often is, for intellectual superiority does not necessarily connote an all-round development, the problem is vastly more complicated. The child may show high intelligence in many directions, trammeled by some one or two emotional or other deficiencies, or he may be of ordinary general intelligence with marked talent in some single direction. In either case there is special need for careful study

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of the individual child, in order that school conditions may be made so far as possible to ease off the strain at the points of special disabilities, or to stimulate and bring to fullest flower the single bud of high promise.

Adult genius is often accompanied by emotional anomalies whereby not only the individual's personal life, but his inhibitions and social adjustment are affected. This gives rise to the question whether superior children, of whom very few, to be sure, are geniuses, do not also suffer from emotional handicaps beyond the ordinary. As social individuals they desire recognition and approbation; as innovators, reformers, creators, they lack the consciousness of kind. They must in many cases fight for acceptance. Gifted with foresight, not to say vision, they may well be dissatisfied with existing conditions, and fail to conform because the environment is far from ideal. Their very superiority manifests itself in their ability to perceive this, and in their desire to better the environment. Submission to environment is desirable only where and so long as the environment cannot be improved. A distinction should be made between voluntary acquiescence in the demands of the environment and unwilling submission to it. Civilization is in effect the change from submission to the environment to conscious acceptance and control; it is a selective process in which the factors surrounding man are appraised and changed or discarded according to his changing needs and his ability to modify and use the environment in behalf of these. Those who have taken an active part in this process are the recognized men of achievement. In the light of these perceptions it is reasonable to suppose that adjustment in the usual sense is not a mark of the superior, for much of his activity is the result of what might be termed constructive revolt; it is non-adjustment for higher ends. An adult realizes why in his revolt he must forego social satisfaction and is compensated by that realization. The misfit child, however, only feels himself at variance with others, sees himself measured by alien standards and found wanting. From this may easily result a train of attitudes, like the "feeling of inferiority," which may later dominate the whole personality.

With these facts before one it is obvious that the proper educational treatment of the superior child is not merely a question of mental testing and segregation, but instead a tangle of pressing problems in human salvage for the sake both of the child and society.

The purpose of the investigation to be reported in this paper was to study superior children as living individuals

rather than as disembodied intellects; to present a series of pictures of conditions which facilitate or hinder their adjustment and the characteristics for which special adjustments must be made.

The problem of the superior child has been approached by three avenues:

1. A quantitative study of the achievement of superior children as indicated by actual accomplishment in school.
2. Individual studies of superior children showing the child in various phases of his development and personality.
3. Biographical studies of the childhood of distinguished men and women.

Who Is Superior?

Superiority may be looked upon as *achievement* in the sense that achievement is a recognition by the group of superiority in activity or creation; it may be considered from the standpoint of *intelligence levels*, or from the standpoint of *potentiality*. Each of these points of view has its advantages and disadvantages.

Achievement as a criterion: Achievement is not a satisfactory measure of ability because it is an end result depending not on ability alone but also on chance, opportunity, and the interaction of intra-individual factors such as permit the realization of the superior trait. The influence of opportunity can be seen in the sudden blossoming of unsuspected abilities in a new situation as was shown in the war. The fact that so many men of genius were ridiculed or martyred in their own time is evidence that to stamp one's influence on one's time requires either a propitious moment, perseverance and persistence or a technique of success. These traits are often not a necessary part of superiority as will be shown later; the superior person may often be a misfit by the very fact of his superiority. Specific disabilities in mental and emotional integration may hamper the achievement of some children who are potentially superior. This standard does not lend itself to quantitative measurement, (for measurement is essentially comparison and unlike things cannot be compared) because achievement is so extremely various in type, particularly in the superior. This criterion, however, has the advantage of excluding factitious superiority of which prematuration with subsequent early arrest is an example.

Superiority quantitatively determined; the scientific criterion: From the standpoint of science, superiority consists of a trait or group of traits which are present in a large quantity or a high degree. From the statistical standpoint those are superior

who in a quantitative measurement of any trait are found at the upper end of a typical curve of distribution. These are individuals who have "most" of the trait. Speed and accuracy of mental processes, such as memory and association, which are greater than the average, median, or normal are examples of quantitative superiority. The person who has these traits in superior degree is superior in certain types of mental achievement because he is endowed with an efficiently functioning mental mechanism whereby he reasons more rapidly and has a better hold on his acquisition than the mediocre. This type is often seen in school where mechanical feats of mental functioning contribute most to the scholastic success of the pupil. The inadequacy of this standard of superiority is at once apparent when the differences, evident to the most superficial observers, in individuals of the same mental level are taken into consideration. Any single test is obviously inadequate and may be extremely misleading as an index of the total individual. Furthermore, no test has as yet been devised which measures the differences which cause one to be a Thackeray rather than a Dickens; a Dunsany rather than a Barrie.

Methods of determining superiority in children: A survey of the older methods of selecting children for special advanced work [3]* shows us that two methods are used: (1) Classification, by promotion or retardation, on the basis of successful completion of the work; and (2) Classification by teachers' selection. In the first cases the child's opportunity to do advanced work is governed by his achievement rather than by his potentiality. That the two are not by any means synonymous will be brought out below, where it will be seen that discrepancies between capacity and achievement occur in the child's school experience just as they do in adult life and for much the same reason. The objections to teachers' judgment as a basis of selection are now familiar through the studies made by Binet and Simon preparatory to the working out of the intelligence tests followed by those of Terman [19] of a similar nature. The tests mark, of course, the beginning of a new dispensation in judging intelligence. By the use of a standardized test it is now possible to select the most gifted children, at least quantitatively if not qualitatively, in so far as their gifts are measured by mental tests.

Mental Tests: Systematic use of mental tests in the investigation of the relation between school grade and mental age such as were made by Goddard [9] and Terman [19] showed

*Figures enclosed in square brackets refer to numbers in the bibliography.

as the former says, in summing up the situation, that many children who are normal mentally are two, three, possibly four years behind their grade. "We find a great many children who are mentally dull not so far behind their grade as their mentality would warrant. We find still worse conditions among those who are ahead of their mentality. The results point clearly to the need of a systematic study of children in order to correct discrepancies between innate ability and school grading."

Mental tests are now being used copiously for finding and segregating superior children. Adler's study [1] involved the use of the Binet series in segregating the children capable of more rapid advancement from those capable of advancing at the usual rate and with the ordinary amount of drill. This experiment conducted upon children of the first and fourth year seemed to show that the tests might be used in predicting which children would be likely to accomplish more than the average amount of work. Perhaps the most significant step taken in behalf of the gifted child in his school relation is represented by the work of Whipple [23]. Whipple shows that the selections made by teachers and principals on the basis of records made in school work, health, industry and application, are liable to error, some pupils having been wrongly placed in the gifted group whereas gifted children had been held back. The results obtained from some sixty-four tests show that the errors could have been reduced virtually to zero, had the pupils been selected by suitable mental tests instead of by their classroom records and the judgment of the school authorities.

While undoubted significance must be granted the mental tests, they fall short in certain particulars which are of vital importance. (1) They measure only intelligence; (2) They give information as to the present mental status; but very little on the nature and course of future development; (3) They give no hint as to the nature or cause of retardation or acceleration nor do they suggest, except in a limited way, the nature of the treatment demanded by any given case; (4) They give small indication of specific abilities outside the relatively limited fields from which the tests are drawn; (5) They give very little indication of the emotional, environmental and physiological factors in individual development.

As soon as the value of the individual test had become clear, group tests were developed by means of which a large number of children could be tested in as little time or less than that required for one. In many places these are now used to determine mental ability.

These tests are subject to error for the following reasons:

(1) They are predominantly language tests; vocabulary is therefore an overwhelming factor in the result; (2) As Stenquist has pointed out, the low degree of correlation between group tests throws serious doubt on the validity of any classification based on a group test; (3) The most serious objection to this type of test is the fact that child and psychologist are so far removed from each other that the particular genius of the child, his interest and coöperation and his physical condition at the time of taking the test are all unknown quantities. The propriety of a group test, for a class, school or school system, is unquestioned but whether a given child shall have the opportunity to progress rapidly is too delicate and serious a matter to be determined by any group test. Mental tests, both individual and group, are useful indices of potentiality, but they need to be studied much more, especially from the standpoint of special aptitudes, before either can safely be used to predict what a child can accomplish in or out of school. As will be shown later, motivation, scholastic aptitude, physical condition and interests are such important factors in school success that a psychological "close up" of every child is clearly demanded.

I. The Classification of Superior Children

Typical classifications of superior children [13, 10, 16] reflect a shifting point of view and the absence of a definite standard of superiority. The children are not judged objectively, nor are the resulting groups mutually exclusive. Stern [18] representing a more scientific standpoint defines superiority, in terms of achievement, as the capacity to make a contribution to the social weal; he also makes a distinction between qualitative and quantitative superiority, between genius and intelligence. Terman's classification is based entirely on the intelligence quotient; the superior "I.Q." is determined by its frequency in a typical distribution.

It is significant that in these classifications there seems to be no common standard of superiority. The world at large measures superiority in terms of achievement. Rare, indeed, are biographies of men of ability who have not distinguished themselves. Sociological investigations, especially those undertaken in the interest of eugenics, have been made on much the same basis, for even if they had not assumed that genius always manifests itself, no other means were at hand for discovering it. A similar statement holds true for the above classifications (with the exception of Terman's and

Stern's, who use psychological tests) because they are based on the child's school achievement.*

The important fact seems to be that there are obviously two kinds of superior children:

(1) The efficient or normal superior (qualitative and quantitative). These may be classified among themselves as to type of ability, talent, or mental level.

(2) The sub-efficient superior. Those whose achievement is hampered by a specific disability (intellectual, emotional or physical) disturbing the functioning of the psyche as a whole.

Such a classification recognizes intra-individual differences and the existence of specific abilities and disabilities. It recognizes the possible discrepancy between potentiality and achievement and stresses the importance of the integration of traits, which latter determine whether or not the individual is unified in his emotions, interests and capacities so that his whole personality can be brought to bear on the attainment of one goal. Normality means that no factor, be it intellectual, affective, or a special talent, is developed at the expense of any other, that the individual is in harmony with himself. Normality is therefore a complex of physical, mental and emotional traits interacting in such a way as to permit the individual to realize all his possibilities. In so doing, he is as great an asset to society as his native capacities will permit, and at the same time he is enjoying that full realization of his possibilities which is necessary to mental health. The normal individual is not necessarily one in whom the various elements of his personality are in themselves adequate, but one in whom they interact and compensate for each other in such a way as to make adjustment possible. Special disabilities are so common at all levels of intelligence that normality is most usefully conceived as the result of total functioning. Normality therefore is not a condition to be determined by comparison of individual with individual, but it is a condition of health, the optimum condition for the individual under consideration. When this optimum condition obtains the individual is efficient, but on his own level, be it that of the mental defective who has been given the simple task that fits his ability or the genius engaged in giving expression to the best fruits of culture. It means that no child will be considered normal or adjusted, in the sense just explained, until he is working under the best possible conditions at his best speed

*Another point to be noted is the fact that mediocre children can be stimulated to high performance by proper motivation and thus do better than superior children who cannot be motivated by ordinary means.

and with the enlistment of all his power for ends which he himself desires and knows to be eminently good and worth while for him.

By superior is meant any plus manifestation in achievement or in qualitative or quantitative intellectual endowment. In the technical sense "plus" in any trait would signify a deviation from the median greater than the probable error. As regards the intelligence quotient, "plus" would be any intelligence quotient, higher than 110 which is the lower limit of superiority set by Terman. "Plus" in relation to academic achievement signifies not only rapid progress in school, due to good powers of attention, ease and rapidity of association, and good learning ability, but ingenuity, inventiveness and originality in specific abilities as well as in the more generalized reactions.

The Academic Achievements of Superior Children

The biographies of famous men show conclusively that the man of genius was frequently a failure in school, or if not a failure, accomplished far less than his ability would have warranted his teachers and parents in expecting. Many able men were not recognized in childhood as superior because their school work (almost universally the criterion of ability in children) was mediocre. Times have changed, however, and with them education—but have the changes in education resulted in an education better suited to the superior child?

Obviously the first step towards getting light on this question is to discover how the school achievement of the superior child compares with that of children of other intelligence levels. It will be remembered that Binet's object in developing the serial mental test was to find a means of discovering those *unable* to profit by ordinary instruction. It is in the lower levels of intelligence that the greatest degree of correlation between the I. Q. and school achievement is found. But how is it with the mediocre and the superior child?

In searching for an answer to this question, the progress rates of one hundred and seventy-five children in the training department of the State Teachers College at San Francisco were studied. One hundred of these were children who had entered the receiving class of the school and had completed the first two years' work. (The Entering Group.) The remainder were children who had attended school for at least four years prior to graduation from elementary school. (The Graduating Group.) Efficiency, by which is meant the extent to which ability functions, was measured in terms of amount

of work completed, or progress rate, as compared with the native ability as measured by the intelligence quotient on the Stanford scale.

The conditions were in many ways peculiarly favorable to an investigation of this sort. An individual system of instruction is in use in the school whereby it is possible for each child to progress at his own rate of speed. In certain subjects such as project work in history and geography, dramatics and music, the children work in groups; in the remaining subjects each child works by himself and is instructed individually. Under these circumstances each child is brought up to a standard level of efficiency before he is advanced to a new unit of work. It is possible, also, to handle each child as an individual with regard to his social and emotional needs and special talents. A psychological examination was available for each one. Physical and social data were available where the situation could not be explained on other grounds. Small classes, close acquaintance with the children on the part of the psychologist, teachers and supervisors called upon for information in connection with the study yielded considerable data of value.*

To find an index of the school efficiency of the groups to be compared (the mediocre and the superior of both the Entering and the Graduating Groups) it was necessary to find the progress rate of each group as a whole. This was done in the case of the Entering Group by finding the average time required by each child to finish the first four units in reading, arithmetic and phonics, which comprise the first two years' work of the school. By taking the average time required by each child for the four units and finding the median of this array a value representative of the rate of the group was found in terms of daily periods required per unit. This value was then compared with the progress rate of the superior children of the same group—the Entering Group—found in the same way. This group has been divided on the basis of intelligence quotient as follows:

Group A, superior children, I. Q.'s over 120

Group B, bright children, I. Q.'s from 110-119

Group C, mediocre children, I. Q.'s from 90-109

*It should be noted further that although the instruction is given by inexperienced teachers, the groups are small, no teacher having more than seven children. Each child is handled according to the direction of a supervisor thoroughly acquainted with the child. That the children are not held back by this method of instruction is shown by the fact that the average age of graduation (preparation for high school work) is low. It should also be borne in mind that the comparisons presently to be made are of different groups of children within the school and so under similar conditions.

TABLE I

Showing the median I. Q.'s and median progress rates for children of the "Entering Group"

Group	*No. of Children*	*Median I. Q.*	*Reading Rate*	*Arith. Rate*	*Phonics Rate*
A	31	126	53	47	42
B	23	115	67	65	72
C	46	102	68	65	67
Whole Group	100	112	65	67	58

It is evident that the median progress rate of the superior children is greater than that of the mediocre, but medians are indicative only of general tendencies. They serve in this case to obscure the point at issue, which is the determination of individual efficiency. From Table II it is evident that some of the mediocre children progress as rapidly as the superior,

TABLE II

*Showing number of cases of superior (A), bright (B), and mediocre (C) children in each quarter of the group (100) when the latter is divided on the basis of rate of school progress. The numbers in parentheses are the percentages corresponding to the free numbers next which they stand**

Quarter	*Group*	*Reading*	*Arithmetic*	*Phonics*
I	A	10 (32)	14 (45)	12 (38)
	B	4 (18)	2 (9)	4 (18)
	C	11 (24)	9 (20)	9 (20)
II	A	11 (35)	9 (30)	12 (39)
	B	6 (26)	6 (26)	7 (30)
	C	8 (17)	10 (22)	6 (13)
III	A	7 (23)	4 (12.5)	3 (10)
	B	6 (26)	8 (35)	4 (18)
	C	12 (26)	13 (28)	18 (30)
IV	A	3 (10)	4 (12.5)	4 (13)
	B	7 (30)	7 (30)	8 (34)
	C	15 (33)	14 (30)	13 (28)

Number of children in each group: A, 31; B, 23; C, 46.

*The correlations between the I. Q.'s and Progress Rates for the individual members of the three groups (A, B, and C) have been calculated by the rank-order method, but show nothing certain, the P. E.'s exceeding the indices of correlation in most cases. When the total group is treated in the same way, however, the correlations come out clearly negative, as one would expect—the higher the I. Q. the less the time needed for learning: Reading, -0.27 ± 0.06; Arithmetic, -0.16 ± 0.07; Phonics, -0.42 ± 0.06.

while some of the superior progress as slowly as the poorest of the mediocre ones. It will be remembered that there are no feebleminded or borderline cases in this group.

A comparison of individual cases given in Table III shows the discrepancy between ability and accomplishment very plainly. Table III gives some typical instances of the intelligence quotient and progress rate of both mediocre and superior children.*

TABLE III

Showing typical cases of I. Q.'s and Progress Rates

Cases	*Sex*	*Age*	*I. Q.*	*Reading*	*Arith.*	*Phonics*
1	Boy	6-2	103	30	25	41
2	Girl	5-6	144	36	42	41
3	Boy	5-9	126	54	56	45
4	Boy	6-1	136	65	62	65
5	Boy	6-3	126	58	53	77
6	Boy	5-9	125	70	83	71
7	Girl	5-1	125	42	43	40
8	Boy	6-3	96	64	74	67
9	Girl	5-11	136	63	72	65

It is clear that chronological age is not a factor in these cases and the superior child has the advantage with respect to mental age (I. Q.). He is mentally considerably older than his more ordinary contemporary. Socially and from the standpoint of experience they are on a par.

The reasons for these differences vary. In no case has actual ill health, or continued absence been a factor. Of course under the circumstances it is not possible to know what rôle, if any, inconspicuous or sub-acute diseases may have played in individual non-success, but there is no reason to believe that the superior and mediocre children were differently affected by such influences. With two exceptions these children are not educational problems for they are all doing work which is up to standard. The differences are due to other causes which can best be seen in operation through the study of the individual cases.

The evidence obtained from the Graduating Group corroborates these findings. The age of graduation and the intelligence quotient of seventy-five such children were compared.

*A table showing all the averages and I. Q.'s will be found in Appendix I. The cases in Table III were selected to show the variety of I. Q.'s occurring with nearly equal progress rates and *vice versa*.

The group included, as will be seen from Table IV, fourteen children of superior intelligence, fifty-eight of mediocre intelligence, and three who were very dull.

TABLE IV

Showing Chronological Ages and I. Q.'s of the Graduating Group

Age	*No. of Cases*	*Median I. Q.*	*Limits I. Q.*
10-10.11	6	129	119-153
11-11.11	8	132	100-143
12-12.11	16	110	95-129
13-13.11	21	106	85-130
14-14.11	21	95	78-108
15-15.11	3	86	85-105

The above table shows that while no very dull child graduates at an early age and no very bright child is retarded, there is considerable overlapping of intelligence quotients at various ages. A very mediocre child graduates at the age of eleven, placing her performance with that of bright and superior children. A boy whose intelligence quotient is 129 finishes school no faster than several mediocre children. An intelligence quotient of 130 is found with intelligence quotients of 85 and 89, despite the fact that while they are of equal age chronologically the superior child has the advantage in mental age. Normal and dull are found in equal proportions at fourteen, which is the normal age of graduation.*

It should also be recorded, that while there was no difference in the average progress rate of boys and girls taken separately in the younger group, the older group did show such a difference. Table V gives age of graduation, I. Q. and mental age. The girls who are a year and a half younger mentally are

TABLE V

	Median Chronological Age	*Median I. Q.*	*Median Mental Age*
Boys	13-2	114	15
Girls	13-6	100	13-6

*Graduation of course means that each child, mediocre or superior, has covered an equal number of school units. It does not necessarily mean that the superior child has not gotten from his units much more than the mediocre child, quite apart from the opportunities for work in special classes which have also been open to him.

four months older chronologically. They graduate early in spite of only mediocre ability. The boys apparently do not profit by their ability as do the girls. It is perhaps fair to state, speaking from an intimate acquaintance with these children, that the boys for the most part use only the ability required to hold their own, which means mediocre achievement only. The girls also wish to hold their own and so use every bit of ability they possess. It is interesting to note, that of the six children graduating before eleven, five are girls, none of whom has as good ability as the boy graduating at that age. Social motives play a more important rôle in the school success of the girls than of the boys. This is a matter of ordinary experience. Many girls are regarded as having superior ability because of the excellence of their school work who do not prove to be superior either in the mental tests or by any standards other than progress rate. Their performances were commonplace as regards quality. They showed no marks of leadership, originality or initiative. Qualities of this latter type are far commoner among boys than among girls.

This condition of affairs is easily explicable on the basis of motivation. The girl depends upon the approval of the group in which she finds herself. Rivalry among girls is likely to center on school success. With the boy, on the other hand, the tendency is away from the school and its demands. We hear of a "gentleman's mark," but not of a "lady's mark." The boy has many avenues through which he may demonstrate prowess—the girl very few which are directly under her control, and not dependent on social or economic status. A girl who comes under ban because of discipline is in disgrace, while a boy may become a hero under similar circumstances. The girl is more docile, accepts ready made values, is more conventional than the boy, so that all the weight of parental and social influence forces her to strive for academic success.

Summary

1. The mental test is not a safe index of school success or rate of progress for children above the normal level of intelligence.

2. Some mediocre children can achieve as much as superior children, and do in fact in many cases achieve more than some superior children.

The explanation of these facts is not easy, for it rests on a number of factors, some of which are difficult of determination. The first question which presents itself relates to the

validity of the standard by which the children are judged superior. It is of course conceivable that the mental test used was not an index of the ability most useful in academic work. The greater part of elementary education consists of the acquisition of facts and skills and habits for whose acquisition motive, attention, and memory are the prime essentials. They are not, particularly in the lower grades, matters of judgment or reasoning. Even where judgment and reasoning might be expected to play a part the child does not make much use of them, but learns to work empirically or by cues and devices, e. g. in long division, the underlying logic of which escapes many adults. The superior child is not necessarily superior in these mechanical sorts of learning and may very well, on account of his greater eagerness of mind, be worse at them. Whatever the nature of the superiority measured by the test, such superiority is not a necessary qualification for school success (as shown by the good progress of some mediocre children) nor does a high record in the test guarantee a like high rate of school progress (as shown by those children of whom there are at least a few who have a high I. Q. but are laggards in school).

The cause of submaximal functioning in superior children will be pointed out in the studies of the individual cases. At this point, however, it is already obvious that the appropriate education of superior children is not merely a matter of segregation in order that the child may progress rapidly, but requires a close study of each child from the standpoint of his emotional and social needs and his latent and special interests.

II. Special Study of Seventy Individual Cases

Selection of Cases

The cases reported in this clinical study are those of superior children who were attending the Elementary Practise School of the San Francisco State Teachers College while this investigation was in progress.* They are the highest intelligences (as measured by the intelligence tests) in a school of some four hundred children. In all, 328 intelligence records were available. Most of these (208) had been obtained as a part of the routine of admission to the school: 120 were the records of difficult children who had been referred to the Psychologist of the institution by teachers or supervisors for one or more of the following reasons:

*Four superior children who had been taught by the writer in another school were also included in this study.

1. The child was an educational problem.
2. The child was a disciplinary problem.
3. The child was not progressing as rapidly as his ability warranted the teacher in expecting.
4. The child showed some emotional peculiarity, which suggested further investigation.

Of these 120 problem cases, thirty-six were children having intelligence quotients of 120 or more. Fully one-third of the problem cases were superior children, while only twenty-one per cent of the whole school population are superior children; from which it may be concluded that superior children are very likely to be maladjusted or working below capacity or laboring under handicaps, as frequently, if not more frequently, than children of less intelligence.

In explanation of this rather unexpectedly large proportion of problem cases of children, both normal and superior, attention may be called to two facts. First, that the ordinary school does not concern itself with minor maladjustments or with the less obvious phases of personality; secondly, neither the term "disciplinary" nor "educational problem" have the connotation generally given them. Inasmuch as the children of this school are not in classes but are working individually the general rate of progress is high, and children who do not reach this rate are considered fit subjects for investigation. It is likely that the great majority would make ordinary progress in an ordinary school. Those children who fail to conform to the regulations of the school or are restless and mischievous are considered "disciplinary problems." There are no cases of truancy, stealing, or maliciousness such as are found in schools where children are not so carefully selected. The charges are trivial ones and hardly worth considering as problems; they are wrong largely because they are inconvenient. Their claim to attention lies in the fact that they are symptoms of a maladjustment which demands attention. The "disciplinary problem" is often a child who has refused or been unable to conform to a situation which need not and should not exist, to which, however, children of greater adaptability but perhaps weaker personality have submitted. What the particular outcome of a difficulty may be depends on the child. Some counteract a disadvantageous factor by a more or less wearing effort (like a child who reads in spite of eye strain) while others will manifest it in a deficiency of some kind or other, as was intimated.

Our present concern is not with what children do which is wrong and how it may be corrected, but the why of it and means of prevention. This is the justification for discussing

cases which from the standpoint of conduct are really not problems at all.

The conditions prevalent in the school were favorable to this study in many respects. An individual system is in vogue, whereby each child may progress at his own rate of speed. Much of the work is on a self-reliant basis, that is to say, the child chooses his own time for studying the various subjects. Considerable latitude is given individual aptitudes by means of optional courses in dramatics, composition, music, art, physical and natural science, shop work and domestic science. Although the teachers are in process of training, the groups are small, and the teaching is carefully supervised. Discipline is made a matter of ordinary good manners and consideration for others, rather than a matter of arbitrary rule.

While these conditions are advantages, because they allow the child considerable liberty in the expression of his inclinations, they are not entirely typical of the ordinary school. Yet this is not a drawback since they allow for individual differences to a greater extent than the conditions in other schools, and the results will err, if at all, only on the side of underestimation of the school difficulties of the superior child.

The standard of superiority according to which the cases were selected was in sixty-five cases an intelligence quotient of 120 or more on the Stanford Revision of the Binet Scale. In five cases (Nos. 13, 16, 17, 40, 41) children with a lower I. Q. were included when there was other and unmistakable objective evidence of exceptionally high intelligence partly masked by specific disabilities.

While clinical studies of children handicapped in various ways abound, studies of superior children which are concerned with the personality as a whole as well as with intelligence are far more rare. Probably the most intensive study of superiority is that of Toulouse*. Terman has reported a number of cases touching on the social, moral and physical aspects [21]. Bronner [2] describes several cases of superior children having special disability. Gillingham [8] gives short case reports of superior children handicapped in various ways. Some exceptional children, showing extraordinarily high I. Q.'s, have also been made the subject of contribution to the popular and scientific magazines [4, 5]. Sporadic cases, so to speak, are found in such works as Stern's *Differentielle Psychologie* and Groszemann's The Exceptional Child. They are reported from various points of view and differ in the nature of the details presented. It is impossible to draw any general conclu-

*Henri Poincaré. Paris, 1910.

sions from them, but they are valuable as illustrations of the various points of view. Their chief contribution lies in the fact that they point to the necessity for studying the individual in all his phases.

Method of Studying the Seventy Clinical Cases

The object of the clinical studies was to obtain a picture of the superior child not only as a pupil but as an individual; to study him from the standpoint of his abilities and disabilities, emotional integration, reaction to environment and his interests. Each child was under the personal observation of the writer. Each child was examined by her; and the data obtained from teachers, supervisors, and in some instances from parents were also obtained in personal interviews.

Following current psychoclinical procedure the physical, social, emotional, and environmental factors of the child's life were considered. A uniform record blank was used (Appendix II, Form 1) for the sake of completeness in investigating and convenience in recording, but as the purpose of the study was to get as complete a picture of the child as possible, many sidelights and insights were gained from actual contact with the child and observations by his teachers which being unclassifiable did not lend themselves to insertion in the form. The interplay among the various factors generally gave the solution of the case. The problem cases were summarized under the following headings: (a) difficulty, (b) significant factors, (c) diagnosis, (d) treatment or follow up. The non-problem cases were studied in the same way, excepting that there was no difficulty found and no diagnosis necessary.

The school history was obtained from the following sources: (1) School records giving attendance, grading based on progress in this school, and standardized tests; progress as shown by the number of days required to complete a given unit of work. (2) Teacher's report on child's social adjustment, behavior, and personality. (3) School principal's report of her contacts with home and child. (4) Nurse's and doctor's report on physical condition. In addition to the school records, special tests were made when they promised to throw light upon any points of doubt.

In addition to the regular psychological test (Stanford Revision of the Binet-Simon test) tests were given for learning ability (Pintner Survey), association tests, etc. Standardized reading tests and reasoning (arithmetical) tests were also used in some cases.

The cases studied fall into three groups:

1. Normal superior, consisting of children fully adjusted and functioning to capacity in so far as this can be judged.
2. Borderline cases, consisting of superior children who were functioning normally but were on the verge of becoming problems.
3. Problem cases.

TABLE VI

Group	*No. of Cases*
Normal Superior	36
Borderline Cases	6
Problem Cases	28
Total	70

No statistical value can be given these figures because more cases were drawn from the problem group in the school proportionately than from the school as a whole.* The following case records selected almost at random show the nature of the material.

Case 1. M. M., boy, 9 years, I. Q. 153.

M. M. is a boy who will graduate shortly after his ninth birthday. His progress in school has always been exceptional although he has not distinguished himself in any particular field. He is obedient, adapts himself easily to school conditions and coöperates readily with the other children in any common project.

The boy is normal in height and weight. He has been absent several times for a few weeks because of illness (the ordinary children's diseases), but his general health is good and he soon regains lost ground.

M.'s intelligence quotient is 153. He shows no specific abilities or disabilities. He is fond of reading, reads rapidly and can remember and reproduce what he reads. He is a natural speller. He was excused from spelling two years ago as he passed the eighth grade tests on the Ayres' list. He has maintained this standing and shown adequate ability in this branch in his written work. In spite of his rapid progress, his parents have felt that he could work faster; their request that he be given homework has however not been granted as it was felt that he was making sufficient progress.

Undoubtedly this child owes his success to his superior endowment and the possession of good physical make-up which offers no obstacle to its functioning. As regards emotion and interest, if the child has any unusual equipment along these lines they are dormant, for although opportunity has been given to express himself in music, art, or science, he has shown no predilection for any of them. It would be correct to say that this boy's interest is not focused, for he has displayed a very steady adherence to his school tasks. He has done the work outlined for him but he has shown no ability or desire to govern his own activities.

Case 10. G. P., boy, nine years, I. Q. 156.

G. P. is a boy of nine in the sixth grade. He is obviously accelerated in spite of the fact that he has been in five different schools in various parts

*It will be remembered that only 328 of the 400 children were tested. Some of these were examined because they were problems. It is likely that there were some superior children in the 400, who were not discovered because they were not problems.

of the country. He has not been under observation very long, but he has already distinguished himself in his work and in the affairs of the classroom. Both his conduct and adaptation to school conditions are excellent.

This boy's intelligence quotient is 156. His vocabulary, ingenuity, and ability to draw abstract conclusions are exceptionally good. The boy is interested in science, in fact, in most of the school subjects, but his major interest is literary composition. He writes a weekly paper, verses, doggerel to be sure, but correct in rhyme and meter and not lacking in humor. He has also written plays and sketches. Much of his work is illustrated. As drawings the illustrations are not exceptional, but they do convey the spirit of the text.

G. is an only child, patently brilliant and well liked by everyone. In spite of these facts, he is modest, thoroughly boyish and averse to open praise. The children in his classroom like him and accept him as one of them although he is much younger than many of them.

This child has escaped all but one of the children's diseases. He is normal both in height and weight and shows no physical anomalies.

G. P. seems to be not only precocious, but qualitatively superior as well. His interests already show a certain channeling but do not as yet deflect interest from school work. This child is not a problem in any sense, nor does it seem likely that he will become one. His emotional stability is good, his environment a wise one and his tastes and inclinations such that they can be readily satisfied in the sphere in which he finds himself.

Case 20. L. M. S., girl, 7 years, I. Q. 144.

L. M. S. has been under observation for two years. She entered school at the age of five and is now doing third, but mostly fourth grade work. Her teacher reports good conduct, an obvious liking for school work, and no difficulty in adapting herself to a school routine. Her progress has been slightly better than the median for the superior group; she has displayed no unusual ability in any other way, however.

She is the daughter of a physician and an artist. Both her heredity and environment are exceptional. Her intelligence quotient is 144. She is inclined to be a follower rather than a leader, due perhaps to her shy and retiring nature. The child has been well since entering school. There is very little to be said of this case as her superiority manifests itself only in school work, which is adequate to the degree of ability.

Case 30. L. M., boy, 7 years, I. Q. 127.

L. M. is seven years of age and has finished all the work of the third year and a large part of the work of the fourth. He was able to read any text as soon as the symbols were explained to him. He is a natural speller, that is to say, he learns to spell incidentally as he experiences words in reading and writing. He is advanced in all the other school subjects also.

The boy's intelligence quotient is 127. He is working to capacity, but he is extremely nervous. This seems to be a congenital matter. He has always been unstable in this respect, according to his mother, but it does not react on his work or his adaptability. He does not find his work taxing apparently as there is no evidence of fatigue. His sleep is normal in every respect. This child is undoubtedly of the unstable type of precocious children.

Case 40. A. T., boy, 13 years, I. Q. 98.

A. T. is a boy of thirteen recommended for investigation as a peculiar child.

The boy is undersize and underweight; he looks like an ill nourished boy of ten. He is hyper-active in an aimless way. His control of his hands

is very poor; he drops things frequently, and when inactive, they are constantly twitching.

The boy's school work is very erratic. He has completed all his work except spelling and writing in much less time than the average child requires. Composition, geography, history and literature are his best subjects. He either does brilliantly in arithmetic or fails outright. Penmanship and spelling are never good, although he sometimes does well in the former subject. Conduct is not good. He is the clown and butt of the classroom. He is not malicious, however, and is ashamed of his misdemeanors.

This boy's intelligence quotient is 98. According to intelligence quotient the boy is not superior; qualitatively, but judged by his accomplishment, he is. His low score is due to failure in tests requiring sustained attention. He could not repeat five digits backwards, or pass the ten-year tests of memory, involving numbers or sentences. Tests requiring abstraction, practical judgment, discrimination and ingenuity were done well up to and including the tests for the average adult. He made a perfect score in the fables test, and his vocabulary test was remarkable for the ability with which he gave the essential significance of the word. If he had passed the tests of attention and memory up to his age his I. Q. would have been 140.

His school work accords well with these findings. His spelling is typical of all his work, he generally fails on long words, the error usually coming at the end. He spells division "divious." It is evident his attention span is too short to include the whole word, the spelling of the last syllable is merely the non-voluntary functioning of an old action pattern.

The personal history is replete with developmental anomalies and illnesses. He has chronic asthma, because of which his sleep is often broken. He is undersize and under-weight. His erratic performance is readily explicable on the score of fatigue.

The treatment of this case is obvious, yet if, as is often the case, he cannot be removed from school, it is important that his abilities and handicaps be recognized, for nothing can be gained by undergrading and discipline while much can be done to preserve a hopeful, constructive attitude in the child against the time when he can take his place among his fellows.

Case 50. S. G., boy, 5 years 6 months, I. Q. 122.

This boy of five and one half years old was admitted to a pre-primary class, as his mental age was six years and nine months. He was failing to adjust himself to school requirements, and was not making as good progress as those who were not so old as he mentally.

The child is normal in height and weight and has had no serious illness. He is, however, hyper-active and unable to fix his attention for more than a moment on any task. Aside from this there are no nerve signs. Possibly the development of the child's attention span and emotional life has not kept pace with his comprehension and practical judgment, by which his advance credits were obtained; on the other hand, this child has many characteristics common to the older "unstable" children. He has been under observation for two years, during which there has been little improvement in his powers of application and adjustment.

Case 60. A. B., girl, 9 years 7 months, I. Q. 124.

A. B. is a girl between nine and ten years old with an I. Q. of 124. Her progress is very poor, she has no special aptitudes, has no plans for the future and does not like school very well. She can be motivated temporarily by praise.

This girl is an only child. Her social life is that of an adult. As she has no aptitude for dramatics, music or dancing, her interests are not focused on these; therefore she cannot be said to be a case of deflection of interest, but rather a case which has never been stimulated by the desire to exercise a talent, by ambition or necessity.

Case 70. G. D., boy, 5 years, I. Q. 180.

G. D. was five years old when first seen. He was normal in height and weight but was pale and languid. His birth and development up to the time of investigation were normal.

Although G. is very precocious he has none of the disagreeable characteristics associated with great precocity. He has a keen sense of humor, is a leader in ideas, though not socially. He is liked by children of his own age, but he is not interested in them.

G's intelligence quotient is 180. He could read (seventh grade standard on Kansas Silent Reading), write, and read figures, and count by 1, 2, 3, 4, 5 and 10 on entering school. His progress was conditioned entirely by the rate at which he was given new materials. He needed no instruction, only a clue as it were, and the process was mastered. At the age of six, he was in the fourth grade—somewhat bored and not particularly interested in anything the school had to offer.

At this time he became an acute educational problem. He was outstripping the other children (also superior but not as high as G) and his interests were those of older children. The stimuli effective with less well endowed children were valueless for him. There was no inherent interest in either the subject matter or in overcoming obstacles. All the social drives such as competition and interest were absent also. He was given opportunity to browse around in science, nature study, manual training, and the arts, but did so obviously because it was expected of him.

Although this boy loves to play, he finds few children whom he likes who are willing to play with him because they are much older. Adjusting this boy socially solved both the social problem and the educational, insofar as the school is fitted to cope with a case like this. The individual system made it possible to place him with older children who, however, were not so old as the children who were doing his level of work. He was able to adapt himself to them so that they accepted him. As his social relations improved, his interest in school work revived, and a real interest in several of the special subjects was developed.

G. has only one clearly defined talent. He has mapped out all the street car lines of the city and neighboring towns. He knows the location of all the streets and how they can best be reached. He is very fond of reading of all kinds. He reads several boys' books and current periodicals with equal zest (he is now eight years old). Well defined interests have not yet appeared.

The outstanding characteristic of this boy is his precocity. His humor and grasp argue a qualitatively superior mentality which has as yet not found its specific avenue of expression.

Special Talents

The discussion of the cases, a few of which have just been given, may be taken up under two main headings:

1. Talents.
2. Disabilities and causes militating against efficiency.

A report of the talents and special abilities of these children

was easily obtained because every child in the school has already been carefully classified according to his degree of ability in special subjects such as music, drawing, composition, dramatics and science. The children in these "gifted" groups are the cream of the school as far as each subject is concerned, although not by any means those having the highest I. Q. Those who did have a high I. Q. and so were included in the case studies were investigated further. Each supervisor of a special subject was interviewed regarding each child, was asked to judge the child as compared with the rest of the "gifted" group in question, and also asked to characterize the quality of the child's ability.

This method, the only feasible one under the circumstances, produces data which have a suggestive rather than a statistical value, because of the lack of objective measures of talent, and the fact that only one judgment, that of the subject supervisor, was available.

In spite of these difficulties, the individual differences in ability and in extra-academic traits are thoroughly worth while studying for the suggestions which they afford for a further study of superiority as shown by actual achievement.

Literary Ability: Ten children had literary ability worthy of special mention. Two wrote verses; one wrote plays, verse, and conducted a journal; another specialized in humor, wrote jokes, riddles and gave funny impromptu talks which delighted the other children; the remaining six did exceptional work but have no individual characteristics.

Drawing Ability: Only three of the twenty-five children reported superior in drawing were superior in intelligence. One other child so mentioned was a boy as yet too young to join a special class. One of the children illustrated his compositions with drawings; another was particularly skilled in cartooning; the third has exceptional possibilities in composition and interpretation, but seems unable to focus his attention sufficiently to carry out his ideas. Fewer of these children are skilled in drawing than in any other ability. This is explainable on the ground that motor control, which is a large factor in drawing, is a negligible factor in the Binet-Simon scale.

Dramatic Ability: Eleven children had dramatic ability. Two types of this ability are found, the imitative and the creative. Children of the first type are capable of following directions and coördinating voice, gesture, etc. to reproduce a model set by the instructor. The second grasp situations and are capable of interpreting them independently.

Musical Ability: Thirty children in all are classed as musical-

ly talented. Seven children have superior ability. Five of these appear in the gifted group and two have shown unusual ability although they have been given only the ordinary opportunities (i.e. are not as yet in special classes). As in the academic work, we find that the intellectually superior child is well represented in a musically gifted group; but some mediocre children do as well as some of the superior ones. The mentally superior are in fact represented only proportionately.

Ability in Science: Five of the children of the superior group were exceptionally bright in science. Three, not only grasped instruction readily, but were able to make original suggestions, select and articulate a problem and work it out independently as a project, having been given the material and appropriate references. Few mediocre children were found among the children superior in science work. The intelligence quotients ranged from 98 to 153. The very superior ones in this field ranged from 119 to 153 in intelligence level.

Here again no numerical comparison can be made, for the young children are not included; nor are any who might possibly have scientific ability but have not selected the subject for specialization. There are two conclusions to be drawn: (1) Dullness and scientific ability are not found together in any of these cases. (2) Only some superior children have scientific ability.

Social Effectiveness

It is difficult to define social effectiveness because the traits which produce it are so varied, but from the standpoint of results it would include among others, the ability to make friends, to arouse favorable attention, to interest others in one's projects, to set a pattern which others find worth while, to lead and influence. It is a factor in determining what impression the individual makes upon his environment, a measure not of what he might potentially accomplish, but of what he actually does accomplish. The socially effective person is the distinctive personality, the leader, the inspirer, the man who gets things done.

This quality must be recognized and studied for it is the *sine qua non* for those whose invaluable contribution is in leadership rather than in manual and material production.

It is not necessarily an accompaniment of great ability, for examples of socially effective persons whose slender talents are thoroughly exploited are numerous in everyday life, while on the other hand ineffectual people, with considerable talent but lacking in the technique of success, are also of ordinary occurrence.

From the standpoint of social effectiveness alone, three types of children are to be discerned in our seventy: First, a negative group variously described as unobtrusive, obedient, colorless, negative, followers, ordinary. Second, several children of marked ability who were well liked and who did not clash with other children, who were in the group, but not of it. Their interests and occupations did not coincide with those of their mates. Third, a group composed of unmistakable leaders, five in number.

A type more common among the superior children than any of the three mentioned is the alert, interested child. They are easily inspired to enthusiasm. They are the leaven of every class, not as originators but as coöperators. A few of the children, all boys, are witty or humorous, have a keen sense of the ludicrous and a certain whimsical mode of expression. Phantasy is more common among the girls. These abilities are enjoyed and appreciated by the other children who accord a certain respect to the children showing them.

It is clear that wide individual differences in quality and degree of specific talent as well as social effectiveness are found in the superior children, differences not brought out by any test now in use. These differences, however, of talent, humor, leadership and capacity for exciting interest constitute the very essence and flavor of personality, and probably are a determining factor in the effectiveness and service to the community of the individual.

The Problem Group

The chief factors operating against the success of these children are: (1) Physical disability expressing itself in fatigue, lowering of attention span and lack of inhibition; (2) Unfavorable emotional attitude; (3) Channeling of energy along the lines of special interests and aptitudes; (4) Lack of motivation.

Physical Condition: Physical conditions as causes of maladjustment in the school population as a whole are well established. The efficiency of the superior child is impaired by them also. He is perhaps able to overcome his handicaps by virtue of his gifts to the extent that he can maintain average standing (none of the children considered in this study who were handicapped by physical disability were making less than average progress), but in so doing energy is lost which might otherwise be expended in superior production. Because the child is not actually deficient in his school work he is less likely to be recommended to the school doctor or nurse for investigation.

In four of our problem cases the emotional condition was a

distinct handicap. These children resemble Byron, Burns and Meyer in their reactions to unsatisfactory conditions,* and they differ totally from an unstable, non-motivated type, to be described in a moment, in that they have well defined, positive personalities. They have a distinct mental attitude; they are not usually suggestible; they are not readily led to accept the values of others, nor to take satisfaction in goals other than those of their own choice. They seem to desire self-realization, and much of their failure is due to unhappiness because they are thwarted. Their difficulty is the logical outcome of the interaction between their personality and the environment.

Although the cases of emotional maladjustments are few, the evidence that these may hinder the realization of the child's possibilities is positive. Where the unfavorable influences have been corrected the efficiency of the child has correspondingly increased.

Motivation: Lack of motivation and indifference due to channeling of interest along extra-academic lines are two phases of the same problem. In the first case, ability and energy are not aroused or are not expended along specific lines, and in the second, interest is focussed on one particular non-academic object and energy goes to waste (from a school point of view) in the achievement of it. In either case the school has to deal with an unintegrated personality.

By lack of motivation is meant the absence of interest in the work, or the desire to do it. Analysing the cases coming under this rubric, it was found that motivation is absent where the work is too easy to challenge effort. The data obtained from these cases as well as actual classroom experience indicate that with the exception of a few children who have a liking for meticulous detail, superior children, boys particularly, put forth just enough effort to accomplish the task passably well. An undergraded superior child doing average work in a low grade will do just as good or better work in a higher grade, but he will accomplish very little with work that is too easy. This point is highly significant for if superior children be selected on the basis of school accomplishment, the undergraded child is not likely to receive his just opportunities. As only four children from outside schools are included in this study, the cases who are not motivated because of undergrading are necessarily limited.

If it be remembered that the child's formal schooling is

*Emotional reactions, as well as other forms of disability in cases of the highly endowed, were studied in the biographies of a number of famous men and women for comparison with similar phenomena in the case of our superior children. See the complete manuscript deposited in the Clark Library.

merely a part of his life and not the whole of it or even to him the most important part of it, it becomes apparent that liking for school and the desire to achieve in school are subject to the same conditions, which are acting in the case of an occupation or avocation. The tendency to use existing capacities will insure the activity of children having a natural aptitude for school work. Numerous cases might be cited (found in this school) in which children of mediocre intelligence, showing superiority in no other way, make phenomenal progress through the grades. They thoroughly enjoy their work, and accomplish what they do with a minimum of strain. Lacking this aptitude, the superior child does not spontaneously engage in school work, for it is not his natural means of self-expression.

In a number of cases it was found that children who have a full social life, or extra-scholastic abilities which receive considerable recognition, are not easily motivated for school work. The child exerts himself not only because exertion is pleasurable, but because successful exertion satisfies certain emotional needs. Through effort the child gains recognition and approbation. Thus his self-assertive tendencies are satisfied and his fear of inferiority averted. Naturally, these emotional satisfactions will be attained as cheaply as possible. If they can be obtained through the more pleasurable exercise of social or artistic talents—if as in many cases, a too generous or protective environment provides them without effort—motivation through emotional satisfactions is lost.

Motivation again is a matter of values. The present day solution of Spencer's question, "What knowledge is of most worth?" must be made in individual terms. What is most worth while is determined by the individual's life plan and philosophy.

The effect of lack of motivation, due to the fact that the task has been given no significance in the child's life, is particularly apparent in the case of the superior child for two reasons: First, his endowment precludes the possibility that he is unable to accomplish more than he has; second, he is not so suggestible and not so content with factitious values. He will not respond to the trifling material rewards or public praise or blame which are effective with most children. In meeting the practical situations arising with these cases it was found that the development of an interest in the work itself, through the achievement of small successes which served as stimuli to further effort, and the definite pointing out to the child of the reasons for the demand made upon him, were most effective in producing the desired results.

Non-Motivated, Unstable Children: Although their misdemeanors and deficiencies are minor, this group of children is perhaps the most interesting, because as problems they are the most baffling. They have considerable ability. They comprehend readily; their learning rate is high; they retain well, and can apply what they have learned. Their progress, however, is mediocre. They are hyper-active, and conform poorly to school routine. They have no permanent interests or specific abilities. Most of them, however, are omniverous readers. No form of motivation is effective for long. They are rarely loyal either to the class or the teacher. Their moods are erratic. Their gayety readily passes into sullenness and discontent. The lack of integration of personality, which they exhibit, is their outstanding characteristic. Their activity is aimless for they have no self-selected goals, and refuse to accept those of the school. If the term be permitted, they are best described as unnucleated personalities.

A number of explanations for this condition offer themselves: (1) These children approach the "constitutional inferior" in type. They do not feel keenly enough to act strongly and consecutively. Their threshold of emotivity is high. (2) They may be suffering from undetected emotional complexes or other obscure unfavorable conditions.

School Aptitude: The subtle influences which are subsumed (crudely it must be admitted) as lack of motivation, channeling of interest or unfavorable emotional attitude result in lack of aptitude for school work. Such a lack was seen in some of our borderline and problem cases. This factor is combined with others to such an extent that it is not always possible to state whether it is a cause or an effect—where lack of interest and motivation due to extraneous interests end and a real difficulty in conforming with school work begins. Yet if the child were genuinely motivated, if school appealed to his imagination, if it were varied enough, if it afforded outlet for ingenuity and self-direction, it is likely that various environmental and intra-individual handicaps would be overcome by the capacity for adjustment and compensation which is a part of normality. Superior children do not necessarily like school. So-called "ordinary children of superior attainments" like school and are successful. This is readily comprehensible, for their claim to superiority is based on their school success (they are successful; therefore they are superior—so say their teachers and parents) and their training has been directed towards this end. The choreics are successful school children but are over-eager and over-zealous, and respond readily to forcing.

Interest: The matter of interest is of specific concern in the superior child's education, first, because he is likely to have specific interests which determine his spontaneous activities; and, secondly, because superior achievement is generally conditioned by a certain focussing of activity or concentration of effort on a special goal. If it becomes focussed during school life on something outside of school, it is obviously deflected from formal education, whereby new problems in method and content are created.

Among the world's geniuses the early development of interests along the lines of specific abilities is marked; in some cases the interest was focussed on a single activity which dominated the whole career; in others there was a diffusion of interest with particular emphasis perhaps on one field.

Channeling of interest similar to that found in the biographical cases was found in five of our cases. These children have well marked talents and aptitudes. They are not only interested; they are successful. Their pursuits are therefore eminently satisfying, since they not only exercise existing faculties, but give a sense of achievement and success as well. They are not stimulated by rivalry for they are not interested in results so much as interested in the doing. Indeed they are not sufficiently conscious of other individuals to know whether they are more advanced or less. Their values are unique, and non-social because based on individual satisfactions, which are determined in turn by unique abilities. It is therefore not strange that no permanent means of motivating these children for school work has been found. The most efficient bribe or incentive, however, is the promise of extra opportunities and leisure for the chosen pursuit.

The main conclusions to be drawn from this examination of interest is that it is the motive to self-education and that it may be an important factor in the masking of scholastic ability since it deflects attention and energy from school pursuits and concentrates them on the self-selected object.

Nothing is gained, therefore, by attempting to deflect interest from other absorbing activities, and much may be lost. The teacher's art consists in building a bridge from the child's spontaneous interests to the essential minimum of school performance. The school produces many individuals who have the tools of knowledge but no desire to use them. The world is full of drifters, full of people with vague longings to do and to be, but who have no clearly defined proclivities, curiosities or preoccupation. The life in which aptitude, feeling and interest are centered on the same object is the effective life because there is no conflict; the whole personality is integrated

for the consummation of one aim. It falls upon the school to foster such integration in all children; where it already exists it should in nowise be thwarted. Indeed, it is unthinkable, and abhorrent in view of the versatility, ingenuity, the elan of the genuinely superior child to allow the school with its poverty-striken curriculum, and its cut and dried methods and regulations to define how the genius shall manifest himself and to measure him by its own narrow standards.

In the last few years considerable progress has been made in the recognition of and provision for superior children in the public schools. T. S. Berry gives an excellent summary of these in his "Classroom Problems in the Education of Gifted Children." These plans fall into two classes:

1. Flexible promotion schemes in which the child is (a) permitted to do more work than ordinary pupils but in the same time; (b) they do a different kind or type of work with no gain of time; (c) they are allowed to do the same work or work differing only slightly from it but in less time.

Types *a* and *c* are schemes well suited to the precocious, type *b*, however, recognizes at least by implication, qualitative differences.

2. Special rooms for gifted children. Here a number of types of provision are given which may be summarized as follows: (a) enriched curricula by the inclusion of high school subjects, intensive exploration of the ordinary field, addition of cultural material; (b) rapid advancement classes; (c) ungraded or mixed rooms including bright and dull children who would profit by special instruction. Individual instruction is in vogue.*

Group instruction is the rule in all cases except that of type *c* in Group 2. Our data show that the superior child requires individual instruction following an analysis of his specific needs. He needs a rich and varied curriculum, such as some of the provisions mentioned above, when sincerely carried out, supply. But more than this he needs to be understood and wisely helped in making his social adjustments. It must be recognized that those traits in which he differs from mediocre children may be the very ones which will bring his talents to flower and give its characteristic stamp to his ability.

III. Biographies of Famous Men and Women

In view of the limitations of existing standards of superiority a study of men and women of acknowledged superiority was

*Here one may well question, particularly if the groups are not small enough to permit the teacher ample time actually to teach each child individually, whether the superior children are not more harmed than benefited by being grouped with children who are very much inferior to themselves.

made which it was hoped would not only afford a basis of comparison between the evidently superior and those who have been assumed to be so (the potentially superior), but give a picture of the gifted man or woman as a child, his development and reactions to his environment.

Selection of Cases: Inasmuch as biographies differ in reliability because of personal bias on the part of the biographer, differences in his access to original sources, differences in relevancy of the data for the purpose in hand, and differences in amount of space given to the youth of the subject, random selection of cases was not possible. Those biographies alone were selected (the material from three large libraries in three different cities was available) which seemed to be impartial in purpose, derived from reliable sources, and above the average in completeness of detail. The relative scarcity of good biographies of superior women made it necessary to include a few biographies which gave less psychological data. In these cases, however, the points which were of interest were given or directly implied (e. g. Ellen Key, Mrs. Fiske).

Method: To do this the biographies selected were studied in a clinical way, that is to say, the intelligence, physical and environmental development, interests and aptitudes were studied just as in the cases of the seventy children. This was suggested by Terman to some extent. It was not found feasible, however, to attempt to find the I. Q. as Terman attempted to do in his study of Galton [20], but wherever given, the facts of psychological constitution were noted.

Data obtained to a large extent inferentially as these were, and from sources vitiated by the factors mentioned above, are of course not subject to quantitative evaluation. This, however, is not a matter of great moment since the purpose of this study throughout is not statistical, but rather clinical and individual. The biographical studies, therefore, followed as far as possible the outline for case study used for the original cases.*

Among men and women of undoubted ability, as these biographical studies show, are found much the same types of development of intelligence and talent, social adjustments and school reactions and channeling of interest as were found in our superior children.

Variations in physical condition also are found just as with our superior children. Of thirty cases twenty-three were normal in health throughout childhood. The remaining seven

*Cases enough were studied so that adding more cases did not add new data or affect the nature of the conclusions to be drawn. A very few only of those studied are specifically referred to in this paper.

were variously described as delicate, nervous or feeble at some time during their childhood.

Ability expresses itself in various ways. We have numerous examples of individuals whose ability, if it existed in childhood in superior degree, was not recognized. In several cases nothing is given in the biographies to show how the child was looked upon by the adult who came in contact with him. Judging from their interests and activities, however, some at least were really precocious.

Wide differences in the degree of precocity and in the extent to which it was recognized may be noted. In five cases the matter is not mentioned in the biographies but they probably were superior, judging from their performance in childhood. Three children were thought to be actually stupid or far from clever. Four cases seem to be those of children, either blossoming late or achieving distinction through the careful fostering of a slender talent.

The specific talents shown in this group need no special discussion. They are found to exist in connection with an obviously high degree of general intelligence—literary and scientific ability without it are unthinkable. Specific disabilities, such as emotional handicaps, defective speech, defective rote or verbal memory, may also be noted.

Dissatisfaction with school life is common in these cases. To some school was an unmitigated bore if not torture. Others were fortunate in escaping it altogether by private education, or in finding satisfaction there. To another group, school was merely a blank, an interruption in an otherwise purposeful existence. As may be supposed, the degree of success varied, also, as was pointed out in discussing the school reactions of our own cases.

In the discussion of the social reactions of the cases of superior children presented above, it was said that the superior child does not necessarily seek the companionship of other children, particularly if he is thrown with mediocre children. The biographical data fully corroborates this statement. In no case did these men and women have a chum, a friend, sufficiently close to influence their lives to a degree worth mentioning in a biography. Some were highly social, were leaders or a source of enjoyment to their comrades. Maxwell, Edison, and Spencer are examples of children who were thought queer or who were not understood by the other children. In numerous cases the channeling of interest was so strong that there was no time or attention available for much social life.

Channeling of interest was marked although occasionally

the interest changed. In some cases it was so marked that school work was neglected. Where the school ministered to the development of the talent, school adjustment was satisfactory.

It is clear that the data obtained from our original cases agree with those obtained from the biographies of men of undoubted genius. These latter also uphold the contention: First, that superiority is a complex of numerous factors; second, that these factors exist in various degrees of development and perfection; third, that no single trait or factor determines the individual's success or contribution to society but that it is the interaction and integration of these factors which determines it.

IV. Conclusions

1. The superior are entitled to careful consideration and special educational and psychological treatment because they are, by virtue of their superiority, that part of the social group which contributes most to its progress, to its material welfare, and to its æsthetic and spiritual enrichment.

2. There is as yet no psychology of the superior child. Superiority or superiorities (specific abilities, talents) are yet to be analyzed into their psychological constituents.

3. There is no infallible index of superiority in general because of variations in the rate at which the superior child develops and of the fact that no trait thus far studied is invariably present in superiority. Such a universal trait may be a superior mental organization, but "mental tests" are too largely measures of maturation rate, and being based on "average" performance, ignore too completely that ingeniousness and originality which is an essential ingredient in superiority. They also provide no safeguard against including the spuriously superior, the merely prematurely developed.

4. Superior achievement, intelligence or talent is not necessarily correlated with normality in other traits.

5. Methods of determining superiority in school have progressed from the subjective (the teacher's estimate) to the objective (mental tests) and from achievement toward innate capacity. Discrepancies between capacity and achievement in school point to a need of further study of the superior to discover what hinders or facilitates the realization of their possibilities.

6. The study of the academic records of superior children warrants two main conclusions: (a) The superior child often works below capacity. (b) The mediocre child may make, when properly motivated, as good progress as the superior

child. This implies that there is nothing, at least in the so-called promotion subjects of the elementary school (particularly in the early grades) which an ordinary child cannot do if properly taught and properly motivated. For the superior child a differentiated curriculum is necessary early in the grades.

7. There are evidently at least two types of superiority: children who are fully integrated and so well adjusted that they function completely and those who are deficient in one or more essential factors of personality or are so maladjusted as to threaten permanent disorganization of their personalities. School maladjustment is common in the superior.

8. Potent factors in the reduction of efficiency are:
   (a) Physical disabilities and their mental concomitants.
   (b) Channeling of energy along the lines of special interests.
   (c) Unfavorable emotional attitudes.
   (d) Lack of motivation.
   (e) Lack of aptitude for school work.

9. These factors so far mask ability that it is important to classify children according to capacity rather than achievement. Having done this it is necessary to remove the handicaps which hinder realization.

10. Individual differences in specific abilities are marked. Here again overlapping in the ability of superior (high I. Q.) and mediocre children was noted. This suggests the need of a careful study of the relation between actual achievement along specific lines and intelligence.

11. The study of these cases most emphatically does not warrant the conclusion that the superior child is always a leader, does well wherever placed or is even liked by other children.

12. The range of individual differences and developmental variations and anomalies, as well as the difficulties arising out of the intra-individual in-coördination, and the clash of the individual with his environment, point clearly to the need of intimate psycho-physical studies covering the developmental history, the physical and emotional status, the social reactions, the intellectual status and the nature of the special aptitudes and disabilities of every child.

13. The curriculum must be variable so as to meet a variety of interests and talents.

14. Individual instruction is the *sine qua non* of the gifted child's education.

15. To find himself, the gifted individual must experiment. To do this, he must be offered numerous stiumuli, outlets and

opportunities so as to find which activity offers broadest play for his abilities.

16. Stereotyped and traditional ideals of social adjustment are not valid for the superior. A distinction must be made between gregariousness and social service. Because of the fact that like seeks like intellectually, it is likely that the highly endowed are "normal" in finding few friends. They should be helped to understand others and should be shown their responsibility in serving society; but they should not be forced against their will to join the crowd.

Appendix I

Individual I. Q.'s and Progress Rates

AVERAGE				SUPERIOR				VERY SUPERIOR			
I. Q.	*Rd.*	*Arith.*	*Phon.*	*I. Q.*	*Rd.*	*Arith.*	*Phon.*	*I. Q.*	*Rd.*	*Arith.*	*Phon.*
103	45	33	28	116	52	75	101	180	0	10	0
100	76	72	65	114	122	51	50	129	44	32	14
94	101	87	88	117	77	70	122	120	65	55	51
101	133	68	51	114	82	76	43	122	53	42	45
100	68	111	122	115	42	40	0	121	66	42	83
96	86	95	149	113	95	79	75	153	24	52	16
108	46	45	39	113	96	50	41	120	70	75	75
103	82	94	65	112	53	56	36	121	52	46	33
95	157	112	126	116	65	52	55	136	65	65	72
91	83	80	95	116	70	68	78	125	42	40	43
101	45	63	47	111	41	76	65	125	70	71	83
95	55	67	115	117	68	75	56	126	58	77	53
100	81	84	55	119	52	65	26	136	90	95	62
103	45	45	74	115	94	107	93	126	53	45	66
108	61	37	63	116	38	75	54	144	36	41	42
109	54	63	62	115	115	85	88	153	54	42	25
109	58	67	58	112	55	67	101	151	37	45	20
93	64	56	66	112	49	43	50	120	94	47	34
103	92	92	75	117	45	72	77	142	54	60	31
95	55	104	67	116	73	83	72	123	62	43	42
107	40	46	30	115	50	51	32	135	48	82	46
102	68	65	76	112	110	124	118	124	61	56	29
98	69	67	64	110	77	74	81	127	96	75	80
100	69	72	66	.....				122	45	45	42
108	118	45	29	.....				120	70	35	39
100	55	41	37	.....				126	40	44	18
97	34	50	29	.....				121	51	122	25
103	73	54	77	.....				126	70	49	44
102	82	43	62	.....				120	45	60	22
109	64	55	74	.....				121	51	45	37
96	50	53	51	.....				133	50	55	50
96	64	68	64	.....				.....			
103	43	59	38	.....				.....			
106	90	75	83	.....				.....			
104	58	103	24	.....				.....			
96	45	69	70	.....				.....			
103	75	68	78	.....				.....			
103	30	41	25	.....				.....			
107	81	88	65	.....				.....			
91	105	68	117	.....				.....			
102	74	78	72	.....				.....			
107	42	45	30	.....				.....			
90	34	41	32	.....				.....			
103	76	92	69	.....				.....			
103	89	81	76	.....				.....			
95	180	73	200	.....				.....			

Appendix II

Form 1

Outline for Case Study

Date.....
Name.....*Birth*.....*Investigation*.....
Difficulty.....
.....

School History

Age.....Grade.....Acceleration or Retardation....
Attendance.....Reg.....Irreg.....Causes of Absences...
Present Progress.....
Progress in Past.....
Best Subjects.....
Poorest Subjects.....
Assigned Cause for Failure.....
Special School Interests.....
Ambition and Interest in Work.....
Most Effective Form of Motivation.....
.....

Social Reactions

Esprit de Corps.....
.....
Comparison—Older, Younger, Brighter, Dull, Equal .....
Leader or Follower.....
Reaction to Teacher.....
Environment.....
Both Parents?.....Father Missing.....Mother Missing.....
Mother Employed during the Day.....
Coöperation and Interest of Parents—active, negative.....
Relation between parents and child.....
Living Conditions.....

Outside Activities

Lessons *Time* *Practice or Study Time*

1.....
2.....
3.....
Amusements.....What.....How Often.....When.....

Physical Condition

General Health.....
Height—over, under, normal.....
Weight—over, under, normal.....
Motor Control.....
Specific Defects.....
Speech.....
Hours of Sleep.....Tea, Coffee, etc.....How much Daily, etc.....

Emotional Factors and Disposition

Happy, morose, sullen, discontented, sulky, petulant, easily moved, stolid..

FORM 2

*Talent Questionnaire**

Supervisor.....

Name.....*Age*.....*Subject*.....

Underline words which apply to the pupil in question.

1. Imitative (follows directions, copies a model, etc.), original, or creative, appreciative.
2. Somewhat gifted, gifted, very gifted.
3. a. Talent well rounded; b, outstanding capacity in talent; c, special disability.
4. If either b or c, what specially?
5. Application—a. conscientious, b. voluntary effort (more than demanded) c. negligent.
6. Motive (if any) for putting forth effort; a. desire to please, b. desire to excel, c. love of the art *per se*, d. ambition.
7. Interest—a. marked, b. active, c. normal, d. negative.
8. Why is child in special group? Parents' wishes, teachers' advice, to be with friends, free choice.
9. Outside opportunities—details.
10. Voluntary effort (independent projects, extra time, etc.)
11. Taste—cultivated, natural good taste but not specially cultivated, mediocre, crude.
12. a. Has this child superior ability on a standard of general achievement or is it superior compared to school standards only?
    b. Is the talent worth cultivating even at a sacrifice?
    c. Would you advise building on this talent as training for a livelihood? (Details)
    d. Would you predict a career for the child in this field?

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*These data were obtained in personal interviews with the supervisor after discussing with her the interpretation to be given to each question.

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THE OUTLOOK FOR CIVILIZATION

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I

A child born and raised among the Hottentots will acquire the habits, the attitudes, the morals of the Hottentots. If a boy is brought up among head hunters, he will likewise become a head hunter. If he is born and bred in the United States, he will take on the characteristics and peculiarities that distinguish the American. Of course, there is a greater variety of customs and other educational influences among the people of the United States than among the Hottentots or head hunters, but that does not change the principle involved. Furthermore, it does not make much difference whether the child is of the same stock as the people among whom he is raised or not, he will become one of them just the same. There may be differences in racial endowments, although we are not so sure now about the once generally assumed inborn superiority of certain races. But even if such superiority exists it would merely mean that the child of a superior race, if brought up among inferior people, say, the Hottentots, might develop into a more efficient Hottentot, a kind of super-Hottentot perhaps, but he would still be a Hottentot.

Instead of comparing different groups of people living at the same time, we might compare the habits and morals of a people of a given racial stock at different periods of its history. We might, for instance, study the Teutons, at the time of Tacitus, in the tenth century, in the eighteenth century, and at present. Again we would find at these different times marked differences in interests, beliefs, and notions of right and wrong. This is not due to any significant changes in the native equipment of that race, for students of biology and anthropology are practically unanimous in the conclusion that during the whole recorded history of the human race the increase in native brain power must have been, at best, very insignificant.

If now we should make a list of all the beliefs, habits, morals, and institutions of which we have a record as existing and having existed, we will find that at one time or another almost any conceivable practice has been tolerated and even glorified and also been condemned and suppressed. This bewildering

diversity of morals and institutions admits of but one explanation, namely, that the decisive factors in molding our conduct are not unchangeable attributes of human nature, but habits acquired under the influence of environment.

But we all know that we have abilities which are not acquired but born with us. Aside from the fact that we react instinctively to light, sound, touch, taste, and smell, we are aware of the sensation of hunger, and the urge of sex, and that we are subject to moods and fits of anger. Perhaps, we have also a native urge for companionship, and for attaching ourselves to some object or cause or ideal, just as such an urge seems to be inborn in dogs and other non-human gregarious animals.* What role do these inherited abilities play in the molding of our conduct?

Modern psychology answers this question. The so-called human instincts are not definitely fixed traits, as has been assumed by an older psychology, but merely impulses, highly flexible sources of energy, which may be organized into widely different expressions and activities. In other words, impulses become potent only because they are directed to form definite habits; in themselves they would produce nothing but empty fuss and fury. For instance, "an impulse activity may find a surging, explosive dischage—blind, unintelligent." But it may also be "sublimated—that is, become a factor coordinated intelligently with others in a continuing course of action. Thus a gust of anger may, because of its dynamic incorporation into disposition, be converted into an abiding conviction of social injustice to be remedied, and furnish the dynamic to carry the conviction into execution. Or an excitation of sexual attraction may reappear in art or in tranquil domestic attachments and services."†

Of course, there are differences in the native ability of different persons, depending on differences in quickness of response to stimuli, in powers of observation—range, differentiation, concentration—, in powers of retaining impressions, in the intensity and the endurance of impulses, and in ways and degrees in which these faculties may be combined. But such differences need not be considered here beyond merely mentioning them.

In the light of modern psychology, then, the old theory of native traits of human beings is no longer tenable, and with it fall all the conclusions based on it. Some of these conclusions, indeed, are so utterly foolish that it is difficult to understand how they could have gained currency at all. For

*cf. Trotter; Instincts of the Herd in Peace and War.
†Quoted from Dewey; Human Nature and Conduct.

instance, it is often asserted that there will always be war because human nature is inherently selfish. But it does not require much power of analysis to conclude that war, at least modern war, would be impossible if human nature were inherently selfish. The fact is that large numbers of men are willing to fight from sheer devotion and loyalty to a given cause to which they have become attached for one reason or another, without the slightest thought or hope of any gain for themselves. It is this very unselfishness of the rank and file that makes modern war possible and sustains it. If they were really selfish, that is, thought of themselves first there could not be war at all.

Another statement frequently met with is this; that war will always be with us because human beings are naturally pugnacious. It may be that a few hot-headed and pugnacious individuals, who happened to be in control of the government of nations, have been the immediate cause of bringing on a war, just as wise and cool-headed statesmen might have prevented it; but that does not justify the assertion that the war has been brought on by the pugnacious instinct of the human race, as if every person involved in that war had been urged on by such a trait. As a matter of fact, impulsive, blind pugnacity is of little use in modern fighting. The good soldier is not merely brave, but he is also intelligent, and the more intelligent he is, the less will he be moved by uncontrolled impulses, by pugnacity and blind fury against individuals whom he does not know and frequently does not even see. Pugnacious impulses as such quickly burn themselves out. If the great war had been due to the pugnacious spirit of the fighters involved, it would not have lasted a month instead of four years, if indeed, it had really gotten under way at all.

The old theories of the "economic man" and of "economic natural laws" have largely been abandoned before the cold facts of experience, but the notion that man is naturally acquisitive and that, therefore, no other society is possible but an acquisitive one, is still widely prevalent, but one does not need much knowledge of history to realize that organizations of society have existed which did not depend on habits of acquisitiveness. Aristotle believed that the institution of slavery had its roots in human nature, because that was the kind of economic regime to which he was accustomed.

A particularly insidious fallacy, a fallacy which is responsible for much of the nonsense that has been taught in economics, is that of attributing to a group of people, definite traits or attributes, or plans, as if they were individuals. Such terms as "social mind," "social conscience," "social will," "social

value," are often used to cover that sort of loose thinking. In reality these terms have meaning only if they refer either to the fact that the groups in question are represented by individuals whose actions and utterances are on the whole approved of or believed to be approved of by those whom they represent, or to the fact that the persons composing such groups have about the same attitude in a given matter because they have influenced each other, or have been subjected to the same environment or the same sort of propaganda, or to the fact that individuals acting and reacting upon each other, have established a sort of compromise or equilibrium in a given matter, as, for instance, in the case of the price of a good established in a market.

Vastly more important, however, than the mere exposing and exploding of old fallacies, is the new outlook that modern psychology has made possible. As long as we believe that human traits are unalterably fixed, in other words, that man is incorrigible, incapable of being educated in any deep sense of the word, then, indeed, no serious attempt will be made to do away with present conditions that cause the human race to kill off periodically the most virile part of its manhood, and to devote the best of its resources and energies to the preparation for such events. But if we realize that we are not in the grip of a preordained fate, but of habits, and that habits are largely the result of environment, and education, then the time has come to prepare for a civilization that is no longer left to the mercy of whatever events may happen to turn up, but is guided by intelligence.

But the knowledge that habits can be changed must not mislead us to the conclusion that they can be changed over night. The saying "you cannot teach an old dog new tricks" points to a significant truth. Of course, children can easily learn something new, for their impulses have not yet been organized into fixed habits. But they must be taught, and who is to teach them but the grown-ups, and what else can they teach them but their own habits and ideas. Hence, the young ones learn the tricks of the old ones, who in their turn had learned them from a still older generation, and so on. A good illustration of this are the habits of speech, in other words language, as they are handed down from generation to generation. Language forms change very slowly, for every attempted innovation on the part of individuals encounters the resistance of the speech-habits of the entire community. Children when left much to themselves, sometimes do invent new ways of talking to each other that nobody else, not even their parents, understand. But as they grow up and mingle

and communicate more and more with the older people around them, they quickly forget these idioms, which as a rule, leave hardly a trace in the language of their later life.

It is this persistance of old habits that makes it practically impossible to reform human beings by merely preaching to them. The Christian Church encountered no great difficulties in converting the European to its doctrines, because the idea of supernatural beings that controlled the fate of man, and the custom of worshiping them, had prevailed among these people long before the advent of Christ. But it has failed entirely to inculcate Christian ethics because its central principle of the brotherhood of men and of love, not only for the fellow members of a community but also for outsiders, ran counter to every habit and idea of the Europeans as well as to the conditions under which they lived.

Nevertheless far reaching changes in our habits have taken place and are taking place now at an ever increasing rate of speed, changes, namely, which are bound up with the transformation of our physical environment brought on by man himself. Against the influence of changed conditions of living the most stubbornly entrenched habits cannot persist. Children who have been brought up in a large city cannot be made to look upon this world with the eyes of their parents who have been born and bred on a farm, no matter how much the latter might exert their authority.

The most important result of this transformation of our environment is the modern scientific attitude toward phenomena of nature, although, of course, it is a cause as well as an effect. (I shall revert to this further on.) But the scientific spirit is not the only result that has come to pass. Other significant changes are going on as well. One of them which may have consequences of the utmost importance is bound up with the status of women in modern society as compared with the past.

In the primitive stages of our parent races in Europe it was the women who did most of the hard work; to them fell the laborious tasks of agriculture and domestic economy, requiring intelligence, skill, and wearisome attention. The men of that period were in a sense a leisure class. They, too, had to exert themselves, but their tasks were not the burdensome consecutive labor of the women, but the exciting and intermittent work incident to the chase and to tribal feuds and war, work performed largely in the psychology of sport and adventure.

A somewhat higher development of agriculture largely changed this situation. The days of adventure and leisure

for the men were over. Their work became assimilated to that of the women; men and women became workers side by side—industrial and economic helpmates; to the men generally falling the work in the field requiring greater physical strength while the women tended to stay at home to perform the many tasks that could be done there.

In the measure that agricultural methods improved and agriculture became more and more productive, larger and larger numbers of workers could be spared to settle in towns and engage in industrial work. But the old interdependence of the sexes still continued for many years, even after an extended industrial activity had set in, for no minute division of labor existed and many of the needs of the people had still to be provided for within the family, at home.

But since the time of the industrial revolution, in the latter part of the 18th Century, the factory has taken up more and more the work formerly carried on by the women at home. This process can be traced particularly well in the economic history of the United States, which in a general way repeats the same stages as Europe, only much more rapidly. Such occupations as spinning, weaving, even knitting to a large extent, have migrated to the factories long ago; clothing with few exceptions is no longer made at home; soap boiling and candle making are lost arts as far as home work is concerned; the butcher, the baker, the cannery, the breakfast food factory, prepare our fare for us; home cooking too, is on the verge of disappearing; the steam laundry washes and irons for us, and the dry cleaner and presser looks after our suits and gowns. There is hardly a task once considered as within the exclusive province of women, that is not taken care of now by some other agency.*

This development has brought about far reaching consequences for the institution of marriage. Not so many generations ago practically all the grown up people were married. They had to be; for the man could not attend to his business unless he was associated with a woman to take care of his needs; to do the work for which only women were trained and which could not be done by any other agency: To the woman, on the other hand, there was hardly any other honorable calling open but that of marriage.

At present all this is changed. To be sure, something like the old economic interdependence of the sexes still persists in some callings, especially on the farms. It is also true that large numbers of women still marry a job along with the

*The preceding four paragraphs have been adapted from an unpublished paper by H. F. Davenport: The Economics of Femininism.

man, namely that of housekeeper. But it is no longer necessary for the man to marry in order to be able to devote himself to his business; on the contrary, marriage may be and often is a handicap in that respect. The women, on their part also, are looking less and less to marriage in order to be provided for. More and more they crowd into the callings and professions that were once considered as within the exclusive province of men; and more and more they are becoming economically independent of men. The institution of marriage is being separated and becoming a relationship apart from the economic organization of society with which it had been bound up in the past.

In consequence we have large and growing numbers of bachelors and single women, especially in the large cities, a phenomenon unknown but a few generations ago. In consequence also, a different attitude from that of the past is developing towards the institution of marriage and questions connected with it. What the outcome will be nobody can tell, but this much is certain, that it involves some of the most difficult problems that the human race will have to face, including the problem of the continuance of the race at all.

In this connection it is important to note that in a society which is predominantly agricultural as was that of the past, a large number of children are a distinct economic advantage to the parents; at least they are not an economic burden. In our present economic organization just the opposite is the case, excepting perhaps, for some farmers, and for backward communities where child labor is still permitted, as in some Southern states of this country.

In the measure that the human race has improved its tools and implements and has thus gained better and better control over its physical environment, and altered it more and more rapidly, its habits, its institutions and laws have likewise changed at an increasingly rapid rate. In the stone age, the customs, the laws, under which a group lived must have remained unchanged for many centuries, unless they were upset through contact with groups of different habits. But at present, under the pressure of our unceasingly developing technology and the gigantic industries that it has made possible, some of our laws to meet these changing conditions are antiquated almost before they have passed the legislature. Modern corporation laws furnish an interesting study in that respect. The time may not be far off when the lawyer, instead of being the custodian of old habits, as he has been in the past, will have to be a social philosopher in order to meet the exigencies of his calling.

An important factor in breaking down old habits, old prejudices, has been the improvement in the means of transportation and communication between nations during the last few decades; also, the development of the modern newspaper and the moving picture, as means of making widely separated groups of people acquainted with each other's customs and institutions.

II

All these changes have been going on whether man wanted it or not. But what of the future? Is it likely that we shall go on forever in the same old way, submitting passively and stupidly to any influences that may arise, and leaving questions of right and wrong to be decided by force, by bombs and machine guns, or may we hope that sometime the human race will be able to take charge of its civilization, and direct it in an intelligent manner?

To answer this question we will consider the problems of man on this planet under two heads, namely, first the problem of understanding and controlling the forces of nature for the benefit of man, and second the problem of regulating the social conduct of man. The first problem has to do with the development of implements, of technology, and above all of science; the second is a question of organization, of institutions, and of morals. Other questions, as for instance, of the perpetuation of the race, of its physical and mental development, of work and recreation, of art in its various forms, need not be considered because they are bound up with the solution of the second problem.

The problem of understanding and controlling the forces of nature may be considered as solved, not in the sense, of course, that there is nothing further to be done in the realm of science and technology, but in the sense that after ages of groping and fumbling the human race has at last succeeded in developing in a large and growing number of its members the scientific attitude towards phenomena of nature, that is the desire, the uncompromising desire, to find out the facts about the physical universe, the truth.

The ultimate truth in all probability can never be known. It is not essential that it should be known, and indeed, not desirable. Important is only that the scientist strive for the truth, for in striving for it he has set up a goal, a beacon-light for which to steer; and with it he has established an objective standard for judgments. Every conclusion that is in harmony with the laws, the behavior of nature, as he has discovered them by experiments, must be true. Conclusions which do

not accord with them, must be wrong. Hence, in the realm of science we have a means of measuring progress.

But the scientist acquires not only knowledge. He is also enabled because of his knowledge to get control over the forces that he investigates, and to use them. Hence, there is progress also in all the many activities and endeavors that depend on science.

It is sometimes argued that, after all, science does not and cannot bring us happiness, for happiness is a state of the mind. The people in past ages without science, it is said, were just as happy or just as miserable as we are. Necessity, so far from being the mother of invention, is really, so the argument runs, born of invention. We invent new contrivances, get accustomed to them, and finally cannot get along without them anymore. If we had never heard of them, we would not miss them at all.

There is truth in these assertions, but they do not touch the issue involved. The real service of science does not consist in creating gew gaws and gimcracks, but in prolonging human life and in liberating human energy from the hopeless drudgery of manual toil, setting it free for other tasks and creating thereby the conditions prerequisite for a higher civilization. To this last point I shall revert later on.

In regard to the prolongation of human life through science I adduce a few statistics.* In the middle of the 18th century, that is at the dawn of modern science and technology, the population of Europe has been estimated at about 130,000,000. On the eve of the great war it had increased to 452,000,000; that is, since 1750 Europe has added to its population on the average about 2,000,000 annually. That is much more than the United States ever added in the same period of time in spite of the fact that large numbers emigrated from Europe to the United States. Europeans, moreover, during that time increased also largely the populations of South America, Canada, Australia, South Africa, and other territories.

To appreciate these figures we will compare them with statistics from Japan covering about the same period. Between 1730 and 1830 the population of Japan remained practically stationary. In 1830 it was about 27,200,000. In 1871, three years after Japan had been opened to the influence of modern European institutions, its population had increased to 32,000,000; and in 1914 it was 53,700,000. In other words, in the forty years after the opening of Japan, its population increased about four times as fast as in the forty years before that time.

*cf. Wilcox: The Expansion of Europe in Population. *American Economic Review.* December, 1915.

Equally striking is the increase of the native races of India, Egypt, Algiers, and South Africa after they had come under the control of Europeans; and of the negroes that had been brought to America as compared with those who had been left in Africa.

On the other hand, fairly trustworthy evidence indicates that in China, the one great body of population which has to this day remained almost impermeable to European influence, the numbers have stayed almost stationery for at least a century, the very period during which the Europeans increased with such astonishing rapidity.

This enormous increase of the Europeans is, of course, not due to an increasing birth rate. The birth rate has declined, at least during the last fifty years. It is due to the conquest of disease through scientific medicine and sanitary engineering. The pestilences which were unavoidable incidences in the life of the Europeans throughout the Middle Ages almost up to the threshold of the 18th Century, and which sometimes, as in the case of the Black Death in England, carried off half the population of the stricken districts, are a thing of the past. If now an epidemic does occur under abnormal conditions, as the flue epidemic in Europe during the great war, it is soon brought under control. Furthermore, had it not been for the development of modern scientific agriculture and modern methods of transportation, Europe and even the United States could not have supported its present population, not even at the low standard of living that prevailed in the Middle Ages.

If, as is argued, the continued increase of population is not desirable and a menace to civilization, then the sensible way to check its growth is not through a high death rate dependent upon disease and suffering, but through the birth rate. If life on this earth is worth living at all, and we must assume that, else all talk about civilization is futile and nonsense, we want to live as long and as healthily as we possibly can.

Now that we know the general course of the history of man, it seems natural, almost inevitable, that sooner or later he would arrive at a scientific attitude toward nature. For after he had become a real human being, that is had acquired somehow the ability to convey concepts through uttered sounds, a process which presupposes power to analyse and to make abstractions, even if in a very crude way at first, he was not only able to pass on from generation to generation the knowledge that he had acquired, but he was also continually being stimulated by this very process of talking, to develop this habit of analysing, of thinking. Bound up with this ability is also, no doubt, his career as a maker and user of tools,

which not only gave him better and better control over his environment, but also changed it and thus forced him continually into new habits and new ways of looking at and doing things, so that step by step, by the mere process of elimination, nature's objective truths had ultimately to be revealed to him.

It is also not difficult to find an explanation why it was that the European peoples above all other races developed the natural sciences and the technology that depends on it. There is no other region of the size of Europe which even remotely approaches it in natural facilities for communication. It is a large peninsula composed of smaller peninsulas. It is accessible from the ocean on all sides excepting on its Eastern border where it joins Asia, from a shoreline that is deeply indented by innumerable navigable bays, so that no part of Europe, excepting the districts near the border of Asia, is far from ocean harbors. Moreover most of the European rivers, although they are small as compared with the water courses of America, Asia and Africa, are navigable for long stretches at least for light draft vessels.

Even in regard to natural conditions for land communication and transportation, Europe is favored beyond any other region. There are only two mountain ranges which present any serious obstacles: the Alps and the Pyrenees; and even these are not really formidable because their valleys run mostly across rather than lengthwise the ranges. The European peoples, therefore, have influenced and stimulated, and mingled with each other in peace and in war far more than any other large groups of peoples of which we have a record.

Furthermore, Europe is also easily accessible from Asia along the whole length of its border; from Asia Minor, which is a part of Europe rather than of Asia; and from the whole length of North Africa; and it has been deeply influenced by races from these regions, fragments of which, in fact, have settled and intermingled with the Europeans. In this connection another fact is also worthy of note, namely, that Europe is situated in the very center of the land mass of this globe in such a manner that all regions of it can be reached from Europe far easier than from any other place. This was especially important before the advent of rail and steamship transportation; and this too, played its role in stimulating the minds of the European peoples and in upsetting old habits.

But most important is the fact that Europe, even in ancient times, was within easy reach of two regions particularly fitted for giving civilization its first start, regions which stimulated habits of work and of foresight, which in fact could not

support human beings in idleness, but which to intelligent effort yielded enormous crops of food, capable of supporting dense populations of agricultural toilers and yet leaving surplus enough for the development of industrial arts, in addition to maintaining a leisure class from which to recruit warriors and, what was most important, students and thinkers: Mesopotamia and the Valley of the Nile.

It is these regions, no doubt, that are the ultimate sources of European civilization. Europe itself, was not a favorable place for starting a civilization from the bottom. There are no regions in Europe which could have supported under primitive condition a population large enough and dense enough to stimulate the development of industrial arts and of learning, and to set aside sufficient surplus for it. Europe to get its start, had to depend upon the experience and knowledge gathered in more favorable climes. But after this start had once been made, and after, through improved agricultural methods, energy had become available for the development of extended industries and for utilizing the immense resources of the subsoil of Europe, especially in iron and coal, then, indeed, there was at the time under consideration, no country in the world that had anywhere near the facilities for further growth—even the climate being favorable under the new conditions. It is, then, perhaps no accident that it fell to the lot of the Europeans to develop the steam engine and other means of using nature's energies and to create the sciences and the technology which in one short century have changed the face of the earth.

So it looks as we trace history backwards. But it is a bad habit to conclude that because things have happened so, they had to happen so; and there is no need for being dogmatic about it. But we are sure of this much, that to the Europeans belongs the glory of having solved the problem of bringing the forces of nature under the control of man.

During the last few decades this scientific attitude has spread to wider and wider groups of the human race, into every corner of our globe; it is bound up with our whole civilization, rooted in the very conditions of our existence; and the time is not far off when nothing short of a cataclysm involving the whole earth, can rob mankind again of this tremendous attainment. The world has been made safe for science and the benefits that science confers.

III

But if we turn from these bright prospects to the other large problem that confronts us on this earth, the problem of

adjusting our social relationships intelligently, we enter a realm of dense ignorance and gloom. In our ability or rather the lack of it, to devise standards and laws for social conduct we have hardly made any progress whatsoever during the whole period of recorded history. We are still groping and fumbling in darkness, as our ancestors have done for ages,—aimless, helpless barbarians.

To be sure, the progress of science and technology has made possible new types of organizations, some of them, we may admit, are marvels of their kind, but most of them, particularly those of a political or economic nature, are as little inspired by considerations for human welfare as were any of the past. They are either ends in themselves or are devised for the benefit or supposed benefit of special groups. Hence they are largely mutually contradictory, and in consequence we have wasteful competition, industrial depressions and unemployment, strikes and lockouts, sabotage and shutdowns, plots and counterplots, and war.

Single individuals, even single nations are powerless against this madness. If they do succeed in establishing institutions meant for the welfare of all, these very institutions are apt to be used for just the purposes that they were organized to defeat. The League of Nations is such a case. But even measures that do enjoy the cooperation or approval of everybody concerned and that do attain the end in view, may nevertheless work gross injustices notwithstanding the best intentions of their sponsors. For the economic organization of modern society is so complex and involved that any disturbance, even a remedy, of one aspect of it, is likely to shake the whole structure. An illustration of this is the Federal Reserve System established by Act of Congress in 1913. It is the most comprehensive piece of banking legislation ever undertaken by any nation, and it was passed only after years of most careful study and research by some of the ablest bankers and economists in the world. It was planned to prevent the recurrence of panics. This it has, no doubt, accomplished. But it has made possible also the great inflation of our currency during and after the war. In consequence the income of large numbers of people was suddenly cut in half; of all those who had loaned money on long term contracts, holders of bonds, of mortgages, of saving accounts, of life insurance policies, or annuities, and so on; also of people who depended on salaries for an income; furthermore of large masses of laborers whose wages were not adjusted to the rising prices. An eminent statistician, Professor King*, has

*cf. American Economics Review, December, 1920.

estimated that about sixty billion dollars worth of property at the price level of 1920 has thus been transferred from one group of people to another, without any value given in return.

But this was not the only consequence and by no means the worst one. This transfer of property was naturally bound up with an immense shifting of income levels for large numbers of people; in consequence there resulted the recent severe trade depression which lasted several years and threw millions of entirely blameless workers out of employment and income.

It is occurrences like this that have led some thinkers to believe that the only way to make this world a better place is to abolish the present economic regime and to establish socialism or some other sort of nation-wide cooperation. But it seems to me that such attempts without first educating ourselves to new habits and attitudes would bring about only other evils and quite likely worse ones than are prevailing now. The present economic system with all its waste, its injustices, and absurdities does fulfill one function that is absolutely necessary for human progress. It sets aside automatically, year in year out, sufficient funds not only for keeping our social capital, our railroads, factories, powerplants, etc. in repair and good working order, but also for adding to it. If that is not done civilization will retrograde and perish. One of the most absurd fallacies, prevalent among large numbers of people, is the identification of money income with consumption of commodities, the belief that because some persons have enormous money incomes, they must be correspondingly enormous consumers. No doubt, rich people generally do consume much more than do poor people, but the bulk of their incomes is not spent for consumption purposes, but is invested again directly or indirectly in social capital. They could do nothing else with it. It does not make any difference how the receivers of large money incomes get hold of them, lawfully or unlawfully, it will be invested just the same; nor is it of such great importance in these days of gigantic corporations whether a rich individual is able in business or not; if he cannot invest wisely himself, others will do it for him.

But just because a few have such large money incomes, the masses of the population have so little, and having so little are forced to live on a relatively low level of consumption. Whether the poor man wants it so or not, it is out of his abstinence that the social capital is kept up and increased. That brings with it, no doubt, grave injustices, but it works.

It is risky to make any predictions about what would happen in another economic regime under conditions that

we do not know. But it is difficult to believe that with the present state of education in the industrial nations of the world, the people would have sense enough to bring to the front as leaders men or women wise and strong and sincere enough to resist the inevitable clamor on the part of large numbers for increased consumption and less work, at the expense of impairing the social capital, and the risk of leaving the future to take care of itself. And this is only one of the difficulties that a socialistic regime would encounter under present conditions.

The Russian communists are trying to avoid such difficulties by holding down the masses by force, aiming in the meantime to educate them to a new point of view, to new habits. If they continue to have able leaders, they may possibly accomplish this, impossible as it may seem now. It is even conceivable that the Germans, reduced to poverty and despairing of escaping the relentless oppression from the outside, may follow the lead of the Russians. If they succeed it will be only after prolonged misery and suffering.

In this connection it is interesting to note what Walther Rathenau, the eminent scholar and thinker and a believer in socialism for impoverished Germany, has to say about capitalism in the United States.* "There is a way," he writes, "by which the day's work can be ennobled and even be made a matter of the mind, on capitalistic lines. Before the war we [the Germans] were just about to enter this path—America is treading it now. Its fundamental condition is a huge increase in general well-being."

"The daily wages of the American working-man have risen [so much that it amounts to so] radical a removal of all restrictions in domestic economy that one can no longer speak of the proletarian condition as existing in the United States"—"In a country whose wealth at this moment is almost equal to that of the rest of the world put together, the process of abolishing proletarianism can go forward on capitalistic lines."

In order to appreciate more fully the helplessness of man before problems of social relationships, let us take an illustration from Europe, in a matter upon which we can look with something like scientific objectivity because no prejudices of our own are involved. The people in Europe have been fighting and killing each other for centuries, not because they had anything to gain by war, or even believed that individually they could gain anything by it, but because of their blind, dog-like devotion and loyalty to a particular group

*Rathenau: The New Society.

to which they had become attached. In modern times such groups are organized on the basis of languages. If the Europeans had a common language such as we have in North America, the great war would not have occurred at all. If they could think of the real cause of their murderous feuds with scientific objectivity, they would have agreed long ago on a common language, if not on one of the existing idioms, then on Esperanto, or Volapük, or Ido, or any other one which might be constructed.

All kinds of superficial arguments have been advanced against such a common artificial language. There is, a vague notion abroad that there is something sacred about a language, that it has a genius of its own, a "sprachgeist." As a matter of fact, languages are nothing but assorted collections of speech-sounds, uttered noises, more or less hideous, which are used in conveying concepts. In the Germanic languages, for instance, the larger part of the vocabulary traces back to imitations of the sound of the impact of one thing upon another; and in all probability that is also the origin of most of the speech-sounds in other languages.* There is nothing particularly meritorious about these or any other speech-sounds of natural origin, excepting for the fact that under the circumstances they were the most convenient, perhaps the only ones possible that could originally be associated with concepts. But after a language has once developed from such sources, it can be used as a basis for constructing an artificial and a much better one than any existing now. For all natural languages, having grown up haphazardly, are clumsy, although they differ in degrees of clumsiness. English is better off in this respect than any other widely used idiom.

Not a few people imagine that an artificial language would rob us of many of the finer shades of ideas and emotions, which they believe are in some way dependent upon this or that particular speech-sound. A little thinking will make it clear that ideas and emotions do not exist because we make this or that kind of a noise; but that we make noises because we have ideas and emotions. To be sure, we cannot convey concepts, in fact we cannot conceive them, unless we tie them to some sense impression, as, a picture, a motion, or, in language, a sound. But that does not mean that it must be just this or that particular sound. Our vocabulary can be expanded just as easily on the basis of the simple and regular forms of an artificial language, as it can be patterned after the clumsy and irregular material of a naturally grown idiom.

*cf. Hilmer: Schallnachahmung, Wortschöpfung und Bedentungswandel.

But the most fallacious argument supposedly in favor of a natural language, is based on the belief that the many misconceptions, called traditions, with which ancient speech-sounds have been tied up at one time or another and with which they are still more or less loosely associated, are fine things to preserve. As a matter of fact, they make clear thinking exceedingly difficult. This is notably so in the field of economics, where it is almost impossible even for a trained thinker, not to tumble into one of the many traps which his language sets for him, because he uses the medium that conveyed also the misconceptions of the past. If the human race had clung to its ancient tools as it clings to some of its progress obstructing traditions, it would hardly have emerged from the stone age.

Finally there are arguments to the effect that an artificial common language would soon break up into dialects; that it would be impossible to teach it to large numbers of people; and even that it would cost too much to have translations made into a new common medium. Such arguments might have been valid in the past, but they do not hold good now, in the age of public schools and compulsory education, of modern means of communication, and of phonographs to standardize speech-sounds if necessary.

There are no technical difficulties in the way of establishing a common language for at least the greater part of Europe. The only difficulty is the collective stupidity of the people involved, the dead weight of their traditions, of old habits and prejudices.

IV

If one contemplates the achievements of man, the scientist, one might be excused for believing that he uses a brain different from that of man, the idiotic blunderer in matters of social relationships.

It is, however, not difficult to understand why the human race has accomplished so much in the one field and practically nothing in the other. All knowledge has been built up and must be built up step upon step. In the field of the natural sciences, any fact once established and recorded forms the basis for further advance, for nature's habits do not change. Long before there was a scientific attitude as we know it now, human beings had discovered truths about nature's behavior by one means or another; through haphazard experimenting, through groping and fumbling, or through merely a stumbling upon them. No matter how much we may attribute to the

genius of a Bacon and other leaders, the scientific attitude has not been created as an *a priori* synthesis, but it has been developed by induction.

Such a process is impossible in the field of social science, for social phenomena are not in themselves right or wrong, moral or immoral, but they are that according to the end in view. Before it is possible to pass universally valid judgments upon social phenomena, the human race has first to agree upon a common aim. But that alone is not enough. To merely proclaim that the aim is the welfare of the human race may mean very little or nothing at all. Nobody is competent to work for the common good of mankind who is not capable of approaching this task with an entirely objective state of mind that will enable him to see his goal and work for it irrespective of his own prejudices. In other words, before it was possible for the human race to even conceive the idea of solving social problems through intelligence, the scientific attitude had to exist, at least in the minds of its leaders. But such an attitude, as has been said, could not be created out of nothing; it could be developed only under the guidance of the objective truths of nature; in other words, the advent of a real social science had to wait upon the development of the natural sciences.

But the fact that in the realm of social science the attitude is basic, makes accurate knowledge of the nature of man prerequisite. Any wrong premises in this respect, any wrong assumptions about the influences that man is subject to, must inevitably invalidate the conclusions reached, not merely part of them, but all of them.

Half truths are fatal in this field. For instance, the guiding principle of universal ethics finds one of its noblest expressions in the Gospel of Christianity. Unfortunately the Christian Church has taught it as part of a fatalistic doctrine, carrying the assumption that man's status on this earth is in the grip of fate, that, in fact, the highest virtue of the Christian is that of resignation and submission to whatever may befall. But no social progress is possible unless it is clearly realized that in this field also man has to solve his problems for himself, just as he has conquered nature by his own unaided efforts.

In the 18th Century the old fatalism of the Middle Ages was supplanted among the leading thinkers by the assumption that man's social conduct was determined by a sort of cosmic law, akin to that which rules the physical universe, and that all that man had to do was to discover and apply it. The founders of the science of economics, in fact, imagined that

they had discovered such a cosmic principle in human selfishness and that it would work itself out through competition for the benefit of mankind. This view has swayed economic thought up to the last decade and is implied in not a few concepts of economics that are taught even now. Thus the very development of the natural sciences has given rise to assumptions that point away from the direction in which social progress lies.

A step in advance was the study of man through introspection. It was an advance in so far as it looked for the source of human conduct to man himself and not to supernatural inspirations and magic, or to cosmic laws. But it could discover nothing but habits that existed at a given time; the real sources of these habits remained hidden. Hence the psychology based on introspection accomplished little more than to confirm the old fatalistic belief that man was born with definitely fixed traits working mostly for evil; at any rate that the mad doings of the human race on this earth were the inevitable outcroppings of human nature.

It is only during the last few decades that we have begun to see more clearly. Psychology, although the youngest of the sciences and still in a crude state as compared with her older sisters, has nevertheless made discoveries the importance of which can hardly be over-estimated. It has laid bare the hidden sources of human habits and conduct. This has been discussed at some length in the first part of this article. It remains only to sum up the conclusions reached, namely, *that so far as human nature is concerned, there is nothing to prevent educating ourselves deliberately and in a scientific manner to an attitude that makes the welfare of the human race its goal.*

Such an attitude is, in fact, no longer a mere aspiration. During the last ten years, and particularly since the great war, a number of books have appeared by leading thinkers in the fields of psychology, sociology, politics, and history that definitely champion this new thought. For the first time in the history of mankind a movement is under way to bring about a civilization under the guidance of intelligence and in accord with science.

Only a few generations ago it would have been impossible to spread such an attitude to the masses of the people, for they had to toil incessantly in stupefying manual labor and had no leisure to be instructed. But power-driven machinery has changed this. The machine has liberated humanity from the necessity of unremittant manual labor, so that even the poorest of us may now receive an education during their

childhood, and are able through the newspapers to keep in touch with the thought of the world in which they live.

We have, then, this situation: for the first time in the history of mankind, a scientific attitude towards social problems has not only become possible but is actually being taught, even if only by a few leaders; and for the first time, also, the human race is in possession of the technical means and institutions for instructing the masses and for keeping them in touch with the intellectual leaders of the race.

This is a wonderful advance over conditions that existed only a few decades ago. At first glance, to be sure, it may not seem to have much practical significance, for in as much as our attitudes are largely determined by environmental conditions while our environment changes through the efforts of man without any regard for social relationships, it may look as if there were no way of breaking up this fatal chain of sequences.

But there is a way, namely, through teaching in our schools, particularly in the lower divisions, the fundamental truths about man, just as we teach the elementary facts about our physical universe.

Because children have been taught that the earth is round and not flat, that it moves around the sun, that the moon is a mass of matter like that composing the earth, and so on, and because they have learned a few simple facts about the natural sciences, the scientific way of dealing with material things has become a habit among civilized nations. The farmer is no longer afraid that witches, or evil eyes, or the moon will work injury upon him or his possessions, or that eclipses will poison his wells; he will not try to avert or cure trouble by uttering spells and incantations, as did his ancestors, but he will do the rational thing and go to a scientist for advice and aid.

Similarly, if we teach children honestly and scientifically the truth about the origin of man, about his nature and about the influences that mold his conduct (which may be done in an elementary way from data furnished by anthropology, biology and psychology), above all, if we inculcate in them the idea that the aim of education is the welfare of the human race (even if this concept has to be left vague) instead of teaching them, as we do at present, to think merely in terms of institutions and organizations, then the path to social progress is definitely entered upon; for children so taught will be open to ideas that will bring gradually to the front in politics and government the best minds of the race, scientifically trained men and women, wise and sincere and loyal to

the human race, and it will eliminate from leadership demagogues, knaves, and fools, just as in other fields quacks and fakes have been replaced by scientists and experts.

There will be opposition at first to such honest and scientific teaching, but ultimately science will conquer here also, for it is impossible to keep it out of just one field while it prevails in all others.

MORAL AND SOCIAL DEVELOPMENT OF THE SIX-YEAR-OLD CHILD

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An estimate of a child's potentials obtained from physical, psychological, mental and pedagogical tests is an important aid in classification. Success in school depends not only upon this combined judgment but upon all that is involved in "Personality."

Development of personality and training in character formation begins in the Nursery—this is the time for acquiring attitudes toward things and people, forming prejudices and making inclinations habitual. Both body and mind are moulded by the environmental influences of infancy. During this period (two—five years) the home should be concerned chiefly with nutrition, play and right surroundings and the development along natural lines of politeness, kindness and honesty.

It is a reverence for Personality that inspires our schools to develop in each child the best manhood or womanhood potentially there—the ability to meet actual life, to discriminate wisely, to live in harmony within the group and to have an active attitude in the face of difficulties.

What is meant by Personality, Character, and Morality? Personality is defined by Prince as:

> "The sum total of all the biological innate dispositions, impulses, tendencies, appetites, and instincts of the individual and the acquired dispositions and tendencies. The study of personality resolves itself into a study of behavior, for only by behavior are we able to recognize the dispositions and other traits of personality—both those which are characteristic of the species and those which are peculiar to the individual."

Fernald (Guy G.) defines Character as the energizing force behind personality.

> "The complementary mental function—the emotivating, feeling, sentimental, instinctive, sustaining, energizing, executive, or vetoeing function of mentality."

Ethics is the science of training in which morals are the "practical embodiment"—that is training which aims to give actual experience in formation of good habits rather than theoretic knowledge.

As Dewey says:

> "The only way to prepare for social life is to engage in social life. The latter will develop a knowledge of what is right so that the child can compare his acts by reference to this knowledge."

Referring to morality:

> "Ideas of any sort whatsoever which take effect in conduct and improve it are moral."

At school entrance the child makes his first social induction in an authoritatively organized world. This means submission to laws, customs, conventions, and the fostering of moral responsibility. The child coming from the well ordered home is somewhat prepared to meet his first moral responsibilities to society in the social life of the school. Morality is the acceptance of such habits as express the helpful relations of society and the individual—as order, quiet consideration of others, and subordination of individual to group desires.

It is only by observing and noting the habits, desires, and interests of the child in the informal social side of education in plays, games, occupations, and project enterprises that we may know what to appeal to and what there is to build upon.

In early childhood play has vital bearings not only on moral and social development but on emotional control. Individualistic and imitative play predominates during the pre-school period. Toward the end of the sixth year play develops into games proper and into games involving competition.

Habits acquired in play are re-enforced by the lively emotional setting of the activity—emotional expressions depending upon instincts.

There is a growing tendency to accept the theory that there are fewer instincts and that what we have called instincts are the result of training—result of habit systems. Burnham accepts Watson's classification "fear, rage and love" as the fundamental emotions, adding the impulse to activity as the "matrix" from which most of the so-called instincts are developed.

At school entrance the character of the environment should be such that these instincts will be developed, organized and strengthened so that only desirable emotional reactions are called forth. Thus it is environment and training (accepting

the theory that heredity fixes the possibilities of development) and the effect on instinct and emotion that bring out desirable responses and suppress the undesirable ones. As Gesell says:

> "Instinct and emotion are as capable of organization as motor and mental processes, but not through didactic prescription but through the illuminating process of self-expression."

Expressions of curiosity at this period are significant. The satisfying of the "why" of things, and "What is that?" often lead to what we term destruction. As Dr. Hall writes:

> "In the active, healthy child the desire for knowledge is omnivorous. He experiments not only with his own sensations but is possessed with a desire to find out how people, animals, and plants will act under certain circumstances. He not only wants to find out what he himself can do, and he wants to know the why of things." He concludes, "that between the ages of four and eight years children are destructive—that this destructive form of curiosity is due to normal development of mentally active children—and that it is allied to constructiveness."

Dr. Hall traces the beginning of curiosity to observation and desire to experiment; which results in questions and ends in destruction. It is the child's characteristic means of gaining information—expression, coming from the desire to touch, see, and hear.

Montessori visualized this need in early childhood in working out her system of developing sense discrimination. Perhaps the most valuable contribution of this method is—the recognition of stimulating the beginning of normal needs through free choice of what is best—providing for free play by developing sense discrimination—that is,

> "Self-control by means of self-expression developed in accordance with growing self-determination."

The Project method of education at this age gives opportunity for developing and encouraging *production* and creativity. It offers opportunity for self development, self control, and self expression, trains the child in cooperative living, permits him "to learn to do by doing" which means that he ultimately learns to—

> "Purpose wisely, to plan intelligently, and to execute with nicety the plans which he has formed, to judge his results." (Kilpatrick).

The importance of the genetic viewpoint has been neglected in past studies of moral and social reactions of children. Gesell has suggested the use of "Social Quotient." This is obtained by grading each child in games, ability to take directions, and conversation.

The free and informal method of education is creating a need for tests which aim to measure moral and social reactions on an age level basis.

The writer selected thirty-six children enrolled in first grades in Worcester, Massachusetts, schools. The basis of selection, a correlated chronological, physical, mental, and pedagogical age of six years was based upon this hypothesis: If there is a positive correlation between the four ages and a correspondingly hygienic environment in which an optimum balance between stimulation and response is maintained for each child, it follows that moral and social reactions are as near normal as can be expected. (Individual differences and training of the pre-school period considered.)

Six teachers were asked to make a careful study of the case histories of their particular group, paying special attention to the objective responses which gave a key to the individual moral and social responses. At a group conference, they presented data resulting from a review of the case histories. The questions were compiled and each teacher was asked to analyze subjectively the objective responses, from which the questions were evolved.

After careful consideration, twenty-two questions were proposed as a first tentative standard for measuring moral and social responses of the children in the group.

Thus individual measures were used to obtain this group standard. The questions were listed without respect to value or importance, and each teacher was asked to mark on the basis of absence or presence, (as shown by objective reactions) their group of six children.

The twenty-two questions are as follows:

In this group of thirty-six children, the child of six:

1. Desires to have his work and play organized.
2. Desires to share the responsibility of the group.
3. Desires to work in agreement with the group.
4. Desires to share his ideas and demand respect.
5. Desires to work with children who are of the same age.
6. Is ready to imitate.
7. Talks spontaneously.
8. Faces a difficult task, a quarrel or an intellectual problem.
9. Accepts the fundamental principles of order.

10. Takes responsibility, takes a command and fulfills it.
11. Respects property, ownership, economy.
12. Does kind acts.
13. Is just, knows the difference between right and wrong, as socially accepted in his group.
14. Plays fair in games, arguments, rights of younger children.
15. Is gracious and courteous, uses please, thank you, good morning, etc.
16. Has developed positive habits and attitudes toward work and play.
17. Shows signs of initiative, leadership, (or participator and follower).

Has established fundamental health habits:

18. Breathing through the nose.
19. Reading, sewing and writing in proper light.
20. Keeping his face, hands, arms and neck clean.
21. Drinking milk and water, eating cereals, bread, butter and fruit.
22. Keeping his teeth clean.

A surprisingly high score was found—with the exception of:

A. No. 8 Child of six is ready to face a difficult task.
B. No. 18 Has acquired correct habits of breathing.
C. No. 22 Has acquired the habit of brushing his teeth.

It is interesting to note a rating of 100% in questions:

A. No. 5 The child of six desires to work with children of the same age.
B. No. 6 The child of six is ready to imitate.
C. No. 16 Positive habits and attitudes toward play and work can be developed.

A rating of 97% in questions:

A. No. 1 The child of six is ready to have his work and play organized.
B. No. 13 The child of six is just, knows the difference between right and wrong.
C. No. 17 The child of six shows signs of initiative, leadership, or of being a participant or follower.

The six teachers were indirectly trained in observing social and moral reactions of each child by previously filling out a questionnaire based upon all school activities.

Four schools were represented in this first study, and the environmental influence and training was evident from the results:

School I. Represents an average class environment, thrifty, cooperative with the school, splendid home training. Receiving the highest rank, 96%.

School II. Three groups (18 children), a mixed population, not over-thrifty or neat—a combination of average and poorer classes, in which home training is a negative quality—best classified as low average—the next in rank, receiving ratings of 94%, 88% and 76%.

School III. Represents an average class environment, exceedingly thrifty, and cooperative, good home training—(final rank), 87%.

School IV. Represents a shifting population, so that the environment is of low type, no cooperation or interest with the school, children are continually changing schools, lack of home training is very evident—the group selected were rated as the highest type in the room—receiving 50% (lowest in final rank).

This group of 36 children rated high in all questions with the exception of those relating to physical habits. It should be kept in mind that this group was "controlled."

These twenty-two questions were then submitted to ten teachers of the first grade, representing seven schools. One hundred and forty children were rated—concrete evidence indicating the possession of these social and moral qualities.

A high correlation was found in comparing the results of this uncontrolled group of 140 with the controlled group of 36, especially in the following questions:

6. The child of six is ready to imitate. Controlled group 100%; uncontrolled 100%.
7. Ready to talk spontaneously. Controlled group 90%; uncontrolled 100%.
13. Is just, knows the difference between right and wrong. Controlled group 95%; uncontrolled 94%.
14. Positive habits and attitudes toward work and play can be developed in the six-year-old child. Controlled group 95%; uncontrolled 92%.

Correspondingly low ratings were received in habits relating to physical improvement:

18. The child of six has acquired habits of correct breathing. Controlled group 85%; uncontrolled 69%.
19. The child of six has not acquired proper habits of reading and writing in the proper light. Controlled group 70%; uncontrolled 70%.
22. The child of six has not acquired the ability to keep his teeth clean. Controlled group 52%; uncontrolled 55%.

In both groups the facing of a difficult task received a correspondingly low rating. Controlled group 74%; uncontrolled 72%.

It was of interest to note (in the uncontrolled group) that in questions numbers 1, 2, and 3, (to have work and play organized; share responsibilities; and to work in agreement) which are of importance in present day discussions, received high ratings, (72%, 74% and 99%) considering the heterogeneity of the group. The judgment of this group of ten teachers, in rating moral and social qualities, was untrained. The lowest rating recorded, in the final rank, was 50%.

If it were possible, a more scientific result might be obtained by having the controlled group rated as many times as possible by different teachers as judges. The process would be very slow, inasmuch as accurate ratings cannot be made until complete histories and studies are made of each child and concrete reactions recorded for each question.

It is hoped that this tentative set of questions applicable to the six-year-old level may stimulate the devising of a similar code for the seven-year level, the eight-year, etc. When each age level has been measured separately, the results should be pooled; overlapping and hierarchial order observed, so that in the final result, fewer questions and only those directly suitable to each level retained.

With this knowledge at hand not only training in moral and social development but correction and discipline will be determined by each individual's stage of development.

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PERSISTENCE, SUCCESS AND SPEED IN A MENTAL TASK

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The products of the schoolroom are conditioned by intelligence and persistence. The low correlations which have been found between mental ability and scholarship have raised various questions, of which the most pressing is this—What is the relation existing between speed of intellectual reaction and persistence, for the vast array of interesting and uninteresting activities of the school day?

Looking at educational procedure from a distance one is tempted to picture the advancement of the child as an orderly progression through tasks of increasing difficulty—tasks which are definite in their nature and exact in their demands. This idea is suggested by the use of such figurative language as "steps," "grades" and "hurdles." While in some branches of the curriculum when superlatively well taught, this may be true for certain portions of the work, in most studies no such definite objective is, or can be, set up. The tasks do not require any definite level of achievement, and after an irreducible minimum of work has been done, they may be continued or abandoned according to the judgment or whim of the student. Thus, while some pupils, before presenting themselves for examination, may read the text half a dozen times, other students are amazed when they learn that more than a single reading is necessary. If all pupils could be made to spend an equal time on their work, there is no question that there would be a distinct increase in the correlation between scholarship and intelligence. It is this lack of tension in the general school programme that nullifies so many predictions based on mental ratings. In a random hundred minutes in school, the pupils constituting the group are probably working on an average at full pressure for much less than half of the time. Competent teachers have estimated the average effective time to be anything from one-tenth to two-thirds of the time spent.

When tasks are assigned which are indefinite in their scope, the bright pupil particularly is apt not to be stirred to his maximum effort. Judging himself not by himself but by others, he performs the task in time T with a degree of merit which experience tells him will be as good or a little better

than that performed by a duller pupil in time T + T′. Had the brighter pupil used this additional time, T′, to full advantage, his performance would have been correspondingly better. The total amount of this time, T′, varies directly with the quality of the instruction and the heterogeneity of the group. It is in the reduction of this lost time that one of the most strategic alterations in group instruction may take place.

The object of the present study is to present evidence which is pertinent to the consideration of the relation, for a particular activity, between speed of work, success, and persistence. In a mental task, which for the pupils under consideration is almost unlimited in its scope, an investigation is made of the relationship between the three factors:

1. Speed of work.
2. Total success.
3. Persistence or continuance in work.

The task used was word building, which was selected after experimentation with several intellectual and mechanical phases of persistence. Experiments were made with mechanical tasks, such as picking up a sphere with pins, with puzzles, and with form-boards which, though impossible, seemed to promise easy solution. This avenue of approach had to be abandoned because it was discovered that unselected children of Grade VIII were prepared, with almost no motivation, to spend 30–40 minutes in tasks which to the examiner were so tantalizing and exasperating that continuance in the work for such periods seemed incredible. Riddle solution was abandoned, owing to the disheartening effect of failure, and the unsatisfactoriness of the "all or none" method of scoring such a test.

As opposed to these functions word building combines the following advantages:

1. Its general idea is familiar.
2. It is interesting.
3. It may reasonably be called a complex intellectual operation.
4. Its objective, while perfectly definite in nature, is from the standpoint of the subject quantitatively indefinite.
5. It admits of perfectly straightforward scoring.
6. It can be used for group examination.
7. The finding of each successive word automatically motivates the pupil.
8. All pupils are capable, in some degree, of performing the task.

The test was administered as follows. The pupils from various upper divisions* of the 8th grade were provided with slips of blank paper, and given the following instructions: "Make as many words as you can from the six letters that I shall give you. You may use any number of letters from one to six, but no letter may be used twice in the same word, and no other letters than these six are to be used." The general procedure was then illustrated by a standardized example on the board, using letters other than those employed in the test proper. The subjects were told that proper names were permitted. This procedure is virtually that given by Whipple. The peculiar feature of the test remains to be explained. Throughout the whole test, numbers, on large cards, were being shown to the class. The numbers ranged from one to two hundred and fifty, each number representing a period of five seconds. As the pupil wrote each word, he glanced up rapidly and wrote just after the word the number being exhibited at that time. This method enables a reasonably accurate estimate to be made of the time taken for each successive word. The directions with reference to the time that should be spent on the task were stereotyped. The examiner in an emphatic voice, twice before the test started, and three times during the test, recited the following formula: "Write as many words as you can. When you are *quite sure* (stressed) that you cannot think of any more words, you will write down the word 'stopped' and after it the number being shown at that time. Then raise your hand, and your paper will be collected." It should be noted that these directions were repeated emphatically five times, that the test was motivated by the presence of the examiner, an assistant, the teacher and usually the school principal. The task was probably more interesting and probably not much less meaningful than many of the tasks which are incident to ordinary school work. It should also be recorded that the alternative to continuance in the work was formal silent reading—not release to the playground. Each record furnished evidence from which could be collected data concerning:—

1. Total number of words obtained. (The Success)
2. Total time between commencing the examination and finally giving up. (Persistence Time)
3. Time taken for each successive word. Whence was derived average time per word for the first ten words, or when ten words were not obtained, the average time per word for the words obtained. (Speed of Thought)

*These sections were roughly formed according to estimates of teachers, the lowest or lower section was never taken, as the demands of the experiment made much pre-drill for such a group necessary.

The results obtained from each of the experimental groups are presented separately. In spite of attempts to make the conditions of the experiment precisely similar in all the groups, there are, from group to group, large differences in the average persistence time. These differences may, on the one hand, be due to genuine differences in the degree of application of the groups, but they are more likely to be caused by unavoidable differences in the general attitude toward the test, created by the examiner and other attending circumstances. At any rate, it seems more reasonable to compare the degree of persistence, success and speed within the particular group, and to draw the conclusions from the separated data.

It is with some degree of reluctance that the word "persistence" is used throughout this study; perhaps "continuance in work" would have been a better term. The connotation of the word "persistence" suggests that it is of necessity a desirable trait whereas "continuance" carries no such implication. It may be urged that the task set was useless and that intelligence would suggest its rapid abandonment as soon as a reasonable modicum of work had been accomplished. This question must be left to the judgment of the reader; in the opinion of the author there is no reason to suppose that the persistence called for in this experiment is not representative of the thousand and one types of persistence that are demanded in the school program. Certainly the majority of school tasks are not so dramatically staged, nor is the attending competition as great, nor are such objective comparisons of achievement as readily made.

Before presenting the main results it seems advisable to mention certain facts which affect the validity of the procedure employed. In table I is recorded the success of several groups examined. This shows for 108 pupils of Grade VIII the number of correct words obtained, each pupil being allowed as much time as desired. It will be seen that even the most successful subject hardly exhausted the words which he could have obtained had he taken a longer period of time. Whipple lists 54 possible words of which at least 33 are well within the vocabulary of the eighth grade pupil.

While it may be true in the extreme cases where 26 to 30 words were obtained that it would be difficult for the pupil to find further words within his vocabulary, scores of such an order are very exceptional. The average score it will be seen is about fifteen words and the table shows how very few of the subjects reached the point where further words would be very difficult to obtain. If it had happened that the majority of the pupils had obtained 25 or more words, the whole experiment would have broken down.

TABLE I

Success of subjects

No. of words obtained	*Frequency*
0–3	2
4	17
8	19
12	25
16	22
20	14
24	17
28	2
Median	14.6

TABLE II

Showing distribution of persistence times

Persistence time in seconds	*No. of subjects*
0	1
100	12
200	14
300	10
400	10
500	18
600	18
700	14
800	4
900	17
1000	13
1100	1
1200	3
Median	614 seconds

In Table II the wide range in persistence time is shown. It will be noted that the time taken by individuals varies from less than 100 seconds up to 1200 seconds. The median time taken is about 600 seconds or 10 minutes.

Many of the pupils who were hasty in abandoning the task were amazed at the pertinacity shown by some of their fellow pupils. They even asked for their papers back, in order that they might add words which came to them after "giving up" the task. Some of those who turned in their papers comparatively early were questioned as to their motive. In the vast majority of cases there seems to have been a momentary belief that they had put down all the words that "would come," but in a few cases it was obviously due to the unwillingness to make an effort which the subject himself knew would result in further success.

The differences between these types may well illustrate two possibilities of failure on the production side. One possibility is represented by the individual who fails to see the full significance and scope of the task assigned; and the other, by the pupil who, in spite of full knowledge of the scope, is unwilling to make the effort to attain the goal.

Regarding Tables I and II, one cannot help but wonder what are the psychological differences between a group of pupils who give up within the first two hundred seconds or within the first ten words, even though these words are coming rapidly, and a similar group who in spite of a low speed of thought do not hand in their papers until more than 20 or 25 words have been obtained or 1000 seconds have elapsed.

The main findings of the study are presented in two tables,

which show the relationships between persistence, success and speed of thought. Persistence is measured by the total time taken from the beginning of the test until the pupil writes the word "stopped". Success is measured by the total number of correct words, repetitions not being counted. Speed of thought is measured by the average time taken for the first ten words. In the few cases where the pupil did not obtain ten words the average time for whatever he obtained was taken.

Table III shows the intercorrelation by the rank square difference method of the various groups of the three factors mentioned. Each group was furnished by an upper section of Grade VIII, from which thirty to forty usable records resulted. The few records that were discarded because of failure of the pupil to follow directions naturally included slightly more slow pupils than rapid pupils. This combined with the fact that only upper divisions were taken means that the slowest subjects characteristic of an unselected grade do not enter into this experiment.

TABLE III

Group	*Speed of Thought and Success*	*Speed of Thought and Persistence*	*Persistence and Success*
A	.19	—.29	.69
B	.17	—.11	.81
C	.40	—.32	.48
D	.35	—.44	.60
Average	.28	—.29	.65

	Speed of Thought and Success	*When all members of groups worked for same time (15 min.)*
B	.60	
C	.62	
D	.66	
Average	.63	

Correlation between the three factors for various sections of Grade VIII

Table III indicates the difficulty of obtaining from group to group a stable relationship between success, persistence and speed of thought. This is partly due to the fact that the estimate of speed of thought is itself none too reliable, based as it is on the time taken for the first ten words or less words. The unreliability of this measure may be gauged from the fact that with the most persistent group, consisting of forty subjects, the correlation between the average time on the

first seven words and the average time on the next seven words, for the thirty pupils who completed fourteen words, is .49. For the first ten words the reliability must be correspondingly higher. Certainly, in spite of the fluctuations, the general trend of the results can be inferred with safety. As might be expected there is a very high average correlation between persistence and success, a decided inverse correlation between speed of thought and persistence resulting in a low positive correlation between speed of thought and success.

It is this last point which demands special consideration. From these results and from other data in my possession it is apparent that while the brighter pupil, speaking in terms of statistical averages, unquestionably excels the duller pupil, the extent to which he excels is disappointing. If, of course, equal persistence had been shown by all pupils, the correlation between speed of thought and success should have risen to as high a point as the unreliability of both measures permits. In spite of the violation of strict statistical procedure I have calculated from certain of the data the partial correlation coefficient between speed of thought and success, with persistence, the third variable, constant; the value obtained is .64. The correlation between speed of thought and success admits of direct experimental investigation. To three groups, B, C, D, after the main experiment was over, the word building test was repeated under the conditions described with the one exception that the pupils were told that all of them must remain at the task for fifteen minutes; under this condition, which keeps the persistence time the same for all pupils, the correlation between speed of thought on the first ten words and success rises to an average value of .63. This experiment gives indication of the extent to which the brighter pupils

TABLE IV

Group	*Speed*		*Persistence Time*		*Success*	
	ratio	*Slowest / Fastest*	*ratio*	*Slowest / Fastest*	*ratio*	*Slowest / Fastest*
A		.32		1.80		1.12
B		.27		1.23		.84
C		.30		1.35		1.10
D		.34		1.47		.70
Average		.31		1.46		.94
		When persistence time was kept constant				
Average		.34		1.00		.61

Persistence time in seconds		*Average time per word for first 10 words*		*Success*	
Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
630	635	24 sec.	22 sec.	15.8	16.0

suffered because they gave up before they had obtained all those words which were easily within their power.

This point which is the centre of the investigation can be well exhibited in another way in Table IV. In this table, for four groups the ratio of the achievement of the six slowest and the six fastest workers is shown. Speed, as before, is based on the first ten words.

In spite of the erratic nature of these results, it will be seen that whereas there are very great differences in speed of thought between the slow and rapid groups, the persistence of the slow group goes a long way towards compensating for the lack of speed. The ratios expressing the relationship of the slow to the rapid group for persistence and success is 1.46 and .94. For the groups where the time is made constant by insisting that each pupil work for 15 minutes, the first ratio automatically becomes 1.00 and the second ratio .61 respectively. This again clearly indicates the extent to which the more rapid pupils lose in the race because they give up while there is still the chance of success ahead.

The results fail to reveal any significant sex differences in persistence, success or speed of work. The average figures based on the records of 48 boys and 48 girls are well within the limits of error.

The attempt to relate this estimate of persistence to such a supposed estimate of persistence as (School Achievement Test Score minus Intelligence Test Score) yielded no significant results. This was in all probability due to the almost complete unreliability of the criterion as was demonstrated in a recent article.*

In closing it is well to call attention to certain grave difficulties which have to be faced by those who pass from the high-road, where speed of reaction to definite tasks is the matter of concern, to the almost unbeaten track, where the object of measurement is certain volitional traits. In one parochial school in which the above experiment was tried by the author, at the end of twenty minutes only three pupils out of forty had abandoned the task. The author was so astonished by the persistence or docility of this group that he repeated the experiment with another section of the same grade at the same school. At the end of twenty minutes only two pupils had abandoned the task. In view of the fact that in the five other schools visited the median time of work was about ten minutes, this result cannot reasonably be

*The Unreliability of the Difference between Intelligence and Educational Ratings. J. Crosby Chapman. J. Educ. Psych. Feb., 1923.

explained on the basis of native persistence or native docility, but by reference to the general attitude created by the teachers of the schools. The environmental factor is obviously much more significant in these non-mental tests than in the intelligence tests. These erratic data are not included in the present study. Group measurement of traits such as persistence, docility, and those covered by certain sections of Miss Downey's Will Profile have to be interpreted in the light of (1) type of training received by the pupil, (2) the prestige of the examiner, (3) the setting of the test, and (4) the manner in which the children weight the importance of the result. There are certain indications to show that in those schools where standard tests are part of the routine the pupils are much less impressed by the solemnity of the occasion and are therefore much more apt to abandon the task than children to whom the general test situation is a novelty. However careful and standardized the procedure, the problem of securing a uniform attitude or set from group to group is extremely difficult.

Summary

When the upper sections of Grade VIII pupils are set to work on a mental task of uncertain scope, such as word building, under detailed and repeated instructions not to stop until it is certain that all possible words have been obtained, the following are the main results.

(1) Great differences in speed of work.
(2) Great differences in persistence. (Continuance in work)
(3) Great difference in success.

The correlation results indicate that while the more rapid pupils achieve the greater success, their margin of success, owing to much lower persistence than the less rapid group, is much less than it should be. When the persistence factor is made equal, the correlation between speed and success increases greatly. The race is to the swift, but the margin of victory is disappointingly small. The experiment suggests the necessity of searching for and assigning school tasks having very specific and definite demands; tasks which cannot be abandoned by the pupil either because of failure to appreciate the scope of the work, or unwillingness to make any effort beyond that required for a very mediocre performance.

METHODS OF TEACHING IN COLLEGE CLASSES

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In preparation for this article it has been my pleasure to visit a number of college classes in five colleges that are members of the Ohio College Association.

There are some features of class recitations which are common to all class rooms. The teacher of the class spends a great deal of time in lecturing or talking while the various members of the class are inactive. When questions are asked of the members, the replies are very short. The assignments are given usually at the close of the recitation and are very brief in character, often being made after the closing bell has rung. There seems to be little attempt at any definite type of teaching method, except in one case where the Case Method was clearly used.

As a means of further investigation, questionnaires were passed out to a class in Educational Administration consisting of 40 members, and to 21 members of the faculty. One member of the faculty noted on the questionnaire that with elementary pupils the lecture method is used almost entirely, but with more advanced pupils the group discussion.

A large number of the faculty marked 3 or 4 teaching methods as an indication that they do not confine themselves to any one method. 18 faculty members thought there should be a specific aim for each recitation, but there was almost an equal division of opinion as to whether this aim should be stated to the class or not.

With regard to the place for assignment, 13 faculty members would make it at the close, and 10 at the beginning of the recitation, and there is no agreement whatever as to the time required for assignment. 8 faculty members assign additional work to the pupils; 6 seldom make such assignment and six never do. 20 out of 21 faculty members feel that their instruction is suited to the average pupil. 10 precede the lesson with some sort of introduction, 8 with some sort of review and 3 with an assignment.

There is a great variety of opinion with regard to the percentage of the class that have a part in the daily recitation. 8 believe that 75 per cent of the class take part; 4 believe

that 100 per cent take part; 4 that 40 per cent take part; 2 that 50 per cent take part, and 2 that 25 per cent take part in recitations.

16 faculty members think that the pupil has too little opportunity of self-expression. 1 thinks the teacher talks too little, and 4 make no response. 9 members close the lesson without either outline or summary. 5 use a summary, 5 use an outline and 3 made no response.

This questionnaire with slightly different wording was submitted to a class of Seniors in Educational Administration. They were first asked to mark the questionnaire having in mind the poorest teacher they had ever sat under in college. After these papers were collected they were handed the same questionnaire and asked to mark it again, having in mind the best teacher they had ever known in college.

In comparing the teaching methods of the best and poorest teachers, sixteen pupils declared that the poorest teacher used the Question and Answer method, and the same number said the best teacher under whom they sat used the same method. Seventeen pupils said that the poorest teacher used the topical method, while three said the best teacher used it. Seventeen pupils said that the best teacher used the lecture method while eight said that the poorest teacher favored such method.

The vote is unanimous that the best teacher has a specific aim for each recitation. Twenty-seven think that the best teacher states the aim to the class, and thirty say that the poorest teacher does not state it. In answer to the question about attempting in each recitation to establish a habit, a skill or an attitude, thirty-eight say that the best teacher makes this attempt, while twenty-six say that the poorest does not make the attempt.

Twenty-four pupils say that the best teacher makes the assignment at the beginning of the lesson, while twelve say that the best teacher makes it at the close. Thirty-five pupils say that the poorest teacher makes the assignment at the close.

Twenty-six pupils say that the best teacher uses six to ten minutes in making the assignment, while twenty-seven say that the poorest teacher uses less than one minute.

Eighteen pupils say that the best teacher seldom assigns additional work to gifted pupils, and sixteen say that the best teacher never does. Thirty-one pupils say that the poorest teacher never assigns additional work to gifted pupils.

Some points are of considerable significance in the agree-

ment that there is between pupil and teacher. There is decided agreement all around that there should be a specific aim for each lesson.

There is almost unanimous agreement that the assignment is made and should be made to fit the average pupil.

Twenty-two pupils will not commit themselves on the question as to whether there is too little opportunity for self-expression on the part of the pupil, or too little explanation on the part of the teacher, but more than three-fourths of the teachers believe that pupils are given too little opportunity.

With respect to the close of the lesson, twelve pupils say that the best teacher uses a summary and twenty-one say that the teacher outlines the main points. Thirty-three pupils declare that the poor teacher closes the lesson without either summary or outline.

President Plantz, of Lawrence University, says: "I believe that much would be gained if the subjects taught in college were presented to the student more in the form of his experience with reality. Textbooks and lectures are too often largely filled with generalizations adapted to mature minds of large information and developed powers of reflection. They are organized forms of knowledge for the convenience of logical minds, but in the world of experience reality does not present itself in any such manner. It is not a thing of definite facts and laws and formulas, but of fused phenomena quite different from what is given us in books. There needs to be better mediation between the logical presentation of facts as usually given in college and the experience of immature minds as they have seen them in the real world. The approach must be more from the concrete than the abstract standpoint. Teaching would thus become more real, more vital, and the interest of students in their work would be correspondingly developed."

Sensing the truth of President Plantz' suggestion that there needed to be better mediation between the logical presentation of facts as usually given in college, and the experience of immature minds as they have seen them in the real world, Columbia University initiated the orientation program for Freshmen with its course on Contemporary Civilization. Since then many courses for Freshmen have sprung up. There are all sorts of names given them! We have gateway courses, citizenship courses, courses in American problems; in international relations; in social and economic institutions; in college aims; courses on college courses aimed to tickle the freshman's palate and help him choose wisely; courses with a fixed content designed to give a common body of knowl-

edge about which all freshmen should rotate, and courses of a browsing nature without predetermined content.

All these courses, whatever their content or method, share in the common purpose of directly or indirectly "training the pupil in thinking." The New York Evening Post expresses surprise that this new form of hazing should be confined to freshmen.

All this leads to the conclusion that college administrators assume that professors know how to teach, but do need help when it comes to the selection of subject matter for freshmen.

There are a few questions that are pertinent to the subject of this paper: 1. Is the degree of Ph.D. a guarantee that the holder of its knows how to teach? 2. Can we assume that anyone who has persisted in graduate work until the University faculty have decided that his room is better than his company is able to impart his knowledge to others?

Harry H. Dunn in an article in the issue of Dearborn Independent, under date of March 22, 1924, says that educational experts are beginning to believe that the constantly growing list of boys and girls who fail to make the necessary grades in college represents a loss not entirely chargeable to the pupil; that at least part of it is chargeable to the teacher. From this is growing the thought that perhaps our teachers, from the normal school graduate who handles the primary grades to the lecturer on the college and university platform, are failing to get over to the boy and girl the lessons they are aiming to teach. Men and women who have made a lifelong study of education have come to the view that the teacher must be taught *how* to teach as well as *what* to teach; that some who are teaching should be doing research work; that many who are teaching should themselves take a comprehensive course in methods of presenting ideas to the classes which come before them so that each pupil may grasp and retain exactly what is offered.

Dr. John Adams, Professor of Education at the University of London, and Emeritus principal of the London Day Training College, says that it is one thing to know and quite another thing to teach. In other professions, the apprentice serves a long term of training before he steps out into his life work, yet the professor, immediately on graduation, begins to profess, steps immediately into his chair as professor of this or that, when often he either has no training or experience in teaching, or is far better fitted for research work than lecturing or teaching.

Dr. Adams has for years taught a class in the University of London for young college lecturers. During the war he was

at the front lecturing to officers in schools of gunnery, engineering and aviation about which he knew very little, but he knew how to teach those officers how to transmit what they knew to other men.

He says: "Without being able to shoot or build bridges or fly, I was able to show gunners and engineers and aviators how to teach what they knew and I did not."

Dr. Adams says there are three things that the teacher must learn if he would hand on to the next generation the accumulated knowledge of his own.

First. He must get the mental background of the student and present everything to the student against the mental background of his mind.

Second. The teacher must learn to present his facts in such order as to appeal to the pupil and to arouse and maintain his interest. This need not be logical order, but such sequence as will make the greatest and most forceful argument with the pupil.

Third, and very important, comes the matter of illustration, the driving home of important points by apt analogy, comparison, elaboration, detailed description, exemplification and contrast. There is a danger of derailing or side-tracking the interest of the pupil by stories which in themselves are more interesting than the subject matter of the lesson, so illustrations and stories must be given the most careful analysis before they are used.

The test of the lecturer or the expositor then is: Does he produce in the mind of the pupil the impression he desires to produce? Does he convey the meaning to each that he intended to convey?

I have had personal interviews with a number of college professors, and have asked them to outline their method to me.

One man in the History Department gives me this as his teaching method. He uses a textbook and makes references to many books in the library. Each pupil is held responsible for a certain number of references each six weeks, as that is the time of the testing period. The pupil in a few paragraphs gives the substance of what he has read in the library. This is handed in to the teacher once a week. There is a check up on this by this teacher in this way. The teacher reads these references and spends ten minutes each recitation period asking questions of three or four pupils who have handed in these paragraphs so that he is sure that the pupil has actually read the reference.

There is often a ten minute period devoted to writing upon some topic in the assigned lesson in the text-book. Each

member of the class chooses one topic from a list of four or five topics that are placed on the board. The remaining minutes of the period are spent in a discussion of important points in the text-book lesson, hearing questions from the class, and explanations and interpretations of references or statements in the textbook.

A professor in Psychology uses this method. A text is used and references given to a number of books in the library. Note books are kept which contain the summary of the reading references, and class notes on the teacher's lecture. The teacher uses the blackboard continuously, putting down an outline of the day's lesson with sub-heads and references. There is a review of previous lessons, and a drill at the close of each lesson on the important items of the outline on the board. The professor consistently follows this method in all his classes.

A professor in Business Law tells me that each member of the class prepares his brief of a case, presents that to the class and defends it against their criticisms. The professor frequently interjects his correction or interpretation, but one man has the floor at a time and presents the result of his work to the class. This method is in use in a Senior class.

There are several questions that arise in one's mind: Is there a conscious difference in the method used in teaching Freshmen and in teaching Seniors? Should there be any difference?

Do college professors keep in mind that the self activity of the pupil is an important thing in the recitation, or do they assume that the student is to sit at ease in the recitation while the teacher occupies the hour?

Do college teachers other than those in the Department of Education make a study of methods?

Is it true that subjects like Mathematics and the Languages are not subject to pedagogical principles, and that there is a stereotyped way to teach them?

What is the purpose of the recitation in college classes? Is it to give information to the student? Is it to hear the student reproduce what has been written in the text? Is it to quiz the student on reference material? Is it to work out cases or problems on the basis of previous reading or lecture? Is it to stimulate thought in group discussion? Is it a few of these combined, or none of these?

In conclusion may I offer these suggestions?

1. A graduate school should maintain a special class for the training of those men and women who are looking forward to teaching positions. This should be in charge of a professor

who is versatile in method, who is recognized as a good teacher, and who has the knack of imparting teaching methods to others.

2. In every college, professors and instructors who are undertaking the work of teaching for the first time should attend a seminar once a week in which teaching methods are discussed, and in which class these men are required to demonstrate different methods of teaching, and receive the criticism of the group.

3. The dean or director of education should be required to make regular visits to all class rooms, observe the method of teaching and hold conferences with those teachers whose psychology and pedagogy are at fault.

4. Every college should make definite plans, and undertake definite measures for the improvement of teachers in service. This should include attendance upon educational meetings, professional discussions among the men and women of a department, general meetings of the faculty devoted to technique of teaching, bonus for summer school attendance, sabbatical leave, encouragement in research and in the preparation of articles for magazines.

It is my conviction that the large majority of the members of the teaching staff would welcome any sympathetic plan that had for its aim the improvement of teaching in their college and that they would enter with whole heart into any proposition that would enable them to direct the minds of their pupils in the fields of knowledge with the maximum of efficiency and the minimum of misdirected energy.

Questionaire on Teaching Methods

Indicate your response by placing a cross (x) before the proper word or phrase.

If more than one answer is necessary, place two crosses before the most significant answer.

1. What teaching method or methods are employed by your teachers in conducting their classes?
   ( ) Lecture ( ) Topical ( ) Type Method ( ) Case Method ( ) Question and Answer ( ) Problem-Project ( ) Contribution ( ) Group Discussion
2. Should there be a specific aim for each recitation?
   ( ) Yes ( ) No
3. Should this aim be stated to the class?
   ( ) Yes ( ) No
4. Should it be the aim of the teacher that each class recitation eventuate in the establishment of a habit, a skill or an attitude
   ( ) Yes ( ) No

5. Where is the lesson assignment made?
   ( ) At the close of the lesson ( ) At the beginning ( ) At some other place
6. How many minutes is generally required to make the assignment
   ( ) Less than one minute ( ) One to two ( ) Six to ten ( ) A longer period
7. Is additional work assigned to gifted pupils?
   ( ) Often ( ) Seldom ( ) Never
8. To what type of pupil is the instruction suited?
   ( ) The slow ( ) The average ( ) The bright
9. Is the day's recitation preceded by
   ( ) A review ( ) An assignment ( ) Some sort of introduction
10. What percent of your class has a definite part in the daily recitation either by voluntary contribution or response to the instructor's questions?
    ( ) 10% ( ) 20% ( ) 25% ( ) 40% ( ) 50% ( ) 75% ( ) 100%
11. As a general rule, do you believe that there is
    ( ) Too little opportunity for self expression on the part of the pupil
    ( ) Too little explanation on the part of the teacher?
12. Is it the usual practice to close the lesson
    ( ) With a summary of the material covered
    ( ) With an outline of the main points
    ( ) Without either outline or summary

BOOK NOTES

Deutsche Versuchsschulen der Gegenwart und ihre Probleme. By FRITZ KARSEN. Leipzig, Dürr'sche Buchandlung. 130 pp.

This is an excellent book for Americans who wish to acquaint themselves with the new German schools. Dr. Karsen points out the essential features and the deficiencies of more than a dozen schools. He classifies them in four groups.

The first consists of schools which have carried through minor or important organizational alterations. The second group of schools concentrates on new methods supposed to intensify instruction and education, and suggested by Comenius, Rousseau, Fröbel and Pestalozzi, but scarcely ever applied in most schools. Seinig in Charlottenburg wishes his children to *do* things. His school is an active-worker community and a museum of self-made objects. Gaudig wants his pupils to understand things in all their relations to men and objects, but not to learn and repeat simply the knowledge of other people. Berthold Otto in Gross-Lichterfelde, on the other hand, is doing away with method. He has recognized the child's inherent laws of growth and has said: "The task of the teacher is to place himself at the disposal of the children for several hours of the day and to answer each question of his pupils in concert with the textbook and also at the most to hint at problems accidentally suggested."

The third group, "the schools of new convictions," includes the *Landeserziehungsheime*, the country boarding schools of Dr. Hermann Lietz, the *Freie Schulgemeinden* of Dr. Gustav Wyneken and Paul Geheeb, the Free School and Work Community in Dreilinden near Potsdam, and the Waldorf School in Stuttgart. Dr. Lietz had in mind an education of all human faculties, his schools are real homes. Dr. Wyneken has given us a new philosophy of individual and community life, and has shown in his writings as well as in his educational work the creative and recreative educational force, the Eros, i. e., love with Plato's meaning. He has also made clear that childhood and youth have significance, value, ideals and form of life of their own. Community life is to him an idea and reality binding every man. Paul Geheeb has created the school community, where men and women teachers, boys and girls are equal in rights and duties. Community life is no longer a definite idea and task, but a continually changing group. The school has accomplished a complete synthesis of creative production and community life, but is apart from the civil community. The Waldorf School has the significance of an organ of a large community and has taken part in the emancipation of the laborer class of its city. But it has a very definite ideal of man and society, the anthroposophical one and, therefore, is again an individual phenomenon.

A revolutionary process is going on, the class of laborers, the women, and the young people are getting conscious of their subordinate position and are struggling for actual freedom, real life and new creative fellowship. The workers are no longer satisfied doing work only for earnings' sake and are attempting to give a new meaning to work. Every individual as well as the community as a whole are creating in their work and thus building up the individual and the community life.

Schools and revolutionary movement are flowing together, the school is growing to be an organ of the civil community which is developing rapidly. The typical representative of this kind of schools is the Experimental School in Hamburg, a public school. The school is free from restric-

tion in any form; with no fixed course of study, no schedule, no regulation, no punishment, the only basis being the inherent law of human growth and the life of the civil community flowing into the school. There is no method in the old sense of the word, but still there is a definite way: Work directed by the requirements of life, accompanied by advice, information and help from teachers, parents, or any person interested in creative work and youth.

It is an inspiring book with many references including almost every German book and periodical on new education.

HEINRICH BOSSHARD.

Education of Gifted Children. By LULU M. STEDMAN. Yonkers-on-Hudson, World Book Co., 1924. Pp. viii + 192. Price $1.80.

This book by Miss Lulu M. Stedman, the organizer, and training teacher in charge, of the "Opportunity Room" of the teachers' training school, connected with the Southern Branch of the University of California, is one of the "Measurement and Adjustment Series," edited by Lewis M. Terman, who furnishes a brief introduction.

That it is a good investment for society to give special care to the training of the specially endowed is the conviction of every man who is entitled to an opinion in such matters. The great question is: How? and, as a first step, Whether along with other children of moderate ability or in special classes? There has been so far much theorizing on the matter but few reports of the results of actual practice. The fact that this book is a record of five years' experience makes it particularly valuable and important. It is hardly necessary to say that the author writes as a convinced believer in segregation.

The fifteen chapters describe in some detail the cases of 17 exceptional children, in 6 cases a chapter is devoted to each—(of chronological age from about 9 to 13, of intelligence quotients, with one exception, from 125 upward, and as regards school work, of upper grammar and junior high school grades)—the problems of the "Opportunity Room" and the principles underlying their solution, the devices used in the enrichment of the curriculum and the results in academic attainment and in general progress. An especially valuable feature is the abundant supply of samples of the work actually done by the children, some of which are truly remarkable.

Two questions which are especially apt to be raised by the skeptical are: Does not segregation result in conceit and an asocial attitude? and, Does not the rapid pace injure the child's health? The experience of the "Opportunity Room" answers both emphatically in the negative. It is desirable, however, to broaden and enrich the work rather than rush through the ordinary course at the high speed that can easily be maintained because the latter procedure lands the children when they enter high school in a group with which they fit badly in a social way because of the great disparity of age.

The pedagogical secret of the "Opportunity Room" is freedom and self-direction, and the children in it work well not only because they are exceptionally able but because they are doing something that seems to them worth while, and incidentally the usual routine subjects are taken care of with time to spare.

The reviewer can hardly repress his wonder that the enrichment of the curriculum in this case was so largely of a literary character. Was it that these gifted children were so literary in their endowment? Was it the easiest means of enrichment? Was it perseveration of academic tradition? Surely there must be hundreds of other ways in which a curriculum can be enriched. Nevertheless the book is a record of a first class educa-

tional experiment and cannot be neglected by any one interested in gifted children and their education, or indeed in any children; for, as Dr. Terman suggests, an important by-product of such studies will undoubtedly be the improvement of teaching in general.

E. C. S.

Giving Your Child the Best Chance. By RUTH DANENHOWER WILSON. Chicago, A. C. McClurg & Co. 1924, pp. 196.

Genetic psychology has many facts which would be helpful to puzzled fathers and mothers, but these facts and the inferences from them are unfortunately not always easily accessible nor always in convenient shape for the non-technical reader. To such readers Mrs. Wilson has rendered a real service in the preparation of this little book. In nine chapters, four of which have already appeared in *McClure's Magazine*, she treats interestingly and practically of The Parents' Opportunity Today, The Emotionally-Neglected Child, The Spoiled Child, The Too-imaginative Child, The Backward Child and the Prodigy, Why Children Lie, The Savage Age from Eight to Twelve, The Know-It-All Age, and The Problem of the Adolescent Girl. The exposition is clear and free from the sort of slips that often mar the work of those who popularize. Indeed throughout the book the author's first hand knowledge of children is pleasingly evident and if any point of criticism were to be raised it might be perhaps that she is a trifle too respectful toward her professional authorities. No two children are alike, and every child is, and ought to be, a case by himself. The parent and teacher deal with individual children as the doctor deals with individual sick people. No rule of thumb can be given, but no parent or teacher can read these easy expositions without getting helpful suggestions and—still more important—without being assisted in his own study of the children in his care.

E. C. S.

A Journey To Health Land. By J. MACE ANDRESS AND ANNIE TURNER ANDRESS. Boston, Ginn & Co., 1924. 194 p.

The Story Series in Health, of which "A Journey to Health Land," is Book One, and "The Boys and Girls of Wake-Up Town" is Book Two, is the sort of entertaining presentation of a serious matter which home and school greets happily, have already accepted thankfully, and for sequels of which the reader awaits eagerly. The statement sums up what a detailed consideration of the book in hand suggests to the teacher wishing to have the authority of a textbook behind her class-work. The summary would be modified by the psychologist, and the teacher of English. The psychologist might wish to know if this new venture in health propaganda (using the abused word in its better sense) would defeat its end by calling too much and too intense attention to the subject of the physical body. The teacher of English who herself concentrated perhaps too meticulously upon words might wish that the use of "cunning," for example, in its perverted sense could have been avoided.

The authors, believing, as they assert, that health is dependent on practical doing, have, in their Health Series, presented the ideas on healthful activities in such a way as to arouse compelling interest in health habits. The first book in the series is intended for children in the third and fourth grades. Technical terms have been eliminated and imaginative stories are used to present the ideas of healthful living which the child in either of those grades ought to know. At the end of each chapter there is a summary of health facts, together with exercises in drawing, story-telling, dramatization, etc. Here the teacher needs to direct in order to obtain the best results.

The general education principles suggested by play-time frolics, visits to the King of Health Land, and various other delightful projects are

found in the health-education bulletins of the United States Bureau of Education, to which the authors give due credit. To them one accords a similar approval for offering those principles in a charming setting.

ROSE HERBERT.

The Unstable Child: An interpretation of psychopathy as a source of unbalanced behavior in abnormal and troublesome children. By FLORENCE MATEER. New York, D. Appleton & Co., 1924. PP. xii + 471.

In this excellent book Dr. Mateer gathers up the results of several years' experience as a clinical psychologist and the detailed study of 369 boys and girls, chiefly delinquents referred by the courts to the Ohio Bureau of Juvenile Research. The book's main message is the need of substituting for reliance upon a mere I. Q. or even upon the result of a single group test, now far too prevalent, the rigid requirement of a careful and fully individualized examination, carried out by a variety of methods and covering the whole range of the child's life and environment,—the only adequate basis for diagnosis and treatment.

Part I (11 chapters) is entitled the "Unstable Child in Theory," but treats rather of the Psychological Clinic and how it should be conducted. Particularly good are Chaps. V and VI, which treat respectively of "The Clinical Psychologist Himself" and of "Means and Methods," and Chapters IX and X which bring out the author's conception of Psychopathy (functional inadequacy), as the dominating factor in the behavior problems of children, and the methods available for its study. Chap. XI points the moral with the story of a psychopathic little girl.

Part II, "The Practice of Psychopathy," (10 chapters) deals chiefly with the case studies of delinquent children. The author's standpoint is, of course, that of every scientific psychologist, namely, that human behavior is an affair of cause and effect, though she expresses it a bit more epigrammatically in the assertion that "there is no such thing as a bad boy or girl. Either the child does not know any better or else he cannot help it." It is not so much feeblemindedness, or environment, or heredity that is at fault (though all these may cooperate) as it is a deviation in the child's psychical and physical organization which makes it impossible for him to adapt himself to ordinary human conditions in the ordinary way. This is the psychopathic condition. To these matters seven chapters are given—Chaps. XII–XVIII. Chap. XIX gathers up tentative generalizations. Chap. XX sets forth, with the evidence for it, an interesting observation of Dr. Mateer's which, if it is fully confirmed by other observers, will deserve to be designated as a discovery of first class importance, to wit, that children tainted with congenital syphilis give such a uniformly characteristic picture in their responses, both the correct ones and the incorrect, to the situations of the tests that their syphilitic condition can be inferred with a high degree of probability from the test observations alone, even when the usual physical stigmata are absent and the Wassermann blood test gives negative results. Though Dr. Mateer brings the observation forward merely as a promising lead, she has been able to diagnose a considerable number of cases on this basis in advance of positive Wassermanns and also in a number in which a negative Wassermann was subsequently replaced by a positive. Such a determination seems not inherently impossible when one recalls the effect of syphilis upon the reflexes and the characteristic mental symptoms of paresis. Chap. XXI sums up and re-enforces the points made in the earlier chapters, and the book closes with a bibliography of sixty-nine titles and an index.

Such records of experience and reports of first-hand clinical studies by competent observers are at present the most valuable contributions possible to the literature of clinical psychology.

E. C. S.

THE INTELLIGENCE OF WHITE FOREIGN BORN CRIMINALS

Carl Murchison

The recent writings of MacDougall, Grant, Stoddard, Pearl, Brigham, East and others have brought into the foreground the problem of national and racial differences and the question of the relative desirability of different racial and national characteristics. Following the articles on American White Criminal Intelligence in *The Journal of Criminal Law and Criminology* for August, 1924, and November, 1924, the writer is now prepared to begin the publication of similar data on foreign born criminals. A comparison of such data with the army norms as published in Volume 15 of the Memoirs of the National Academy of Sciences should give at least some insight into the above problems. For a history of the gathering of this data the reader is referred to the articles appearing in *The Journal of Criminal Law and Criminology* designated above. It is only needful to state here that the Army Alpha Test was given to all inmates of the state prisons in Ohio, Illinois, New Jersey and Maryland and that this article is the beginning of the reports on the foreign born male adult criminals.

The total number of foreign born criminals with which this and following articles are to be concerned is 761. This is not a large number of cases for statistical treatment, but is as large as could be obtained at the present time by ordinary influences of admission to state prisons.

Let us first compare the distribution of the Alpha scores of foreign born criminals with the distribution of Alpha scores of foreign born recruits in the draft as reported on page 695 Volume 15 of the Memoirs of the National Academy of Sciences. The reader will remember that we are dealing with 761 cases of criminals and 4,737 cases of recruits in the draft army, both groups being foreign born.

Following is the comparative distribution of the two groups:

Alpha Score	Criminal Cases	Percentage of Criminal Cases	Percentage of White Draft
0– 9	116	15.2	8.3
10– 14	59	7.7	6.0
15– 19	44	5.8	4.7
20– 24	45	5.9	6.4
25– 34	91	11.9	12.1
35– 44	73	9.6	11.9
45– 59	95	12.5	15.4
60– 74	93	12.2	11.4
75– 89	53	7.0	8.8
90–104	39	5.1	6.1
105–119	28	3.7	4.0
120–134	14	1.8	2.3
135–149	6	.8	1.3
150–212	5	.7	1.2

Transferring the above distribution in letter grades we have the following:

Letter Grades	Percentage of foreign born draft	Percentage of foreign born criminals
E	14.3	22.9
D	11.1	11.7
C—	24.0	21.5
C	26.8	24.7
C+	14.9	12.1
B	6.3	5.5
A	2.5	1.5

It will be observed that the foreign born draft seems superior to the foreign born criminals. In the case of the draft we have 23.7 per cent. superior to C while only 19 per cent. of the foreign born criminals are superior to C. Also 49.4 per cent. of the foreign born draft are inferior to C while 56.1 per cent. of the foreign born criminals are inferior to C. It will be remembered that the result of this comparison is quite different from the comparison of native born white criminals with the native born members of the draft as reported in *The Journal of Criminal Law and Criminology*. Does it follow from this fact that the old concept of feeble-mindedness in a realm of criminal behavior is a truer concept in the case of foreign born criminals than in the case of our own native born criminals? Can the above results be used as an argument against the admission of the foreign born into America? The writer has no desire to play the part of the propagandist in this report but does wish to prevent the drawing of false conclusions. For the sake of proper insight into the problems involved let

us remember the wide variation in the geographical distribution of intelligence in the American draft army and compare the distribution of the intelligence of foreign born criminals with the distribution of intelligence of the Arkansas draft and the North Carolina draft as reported on pages 689 and 690 of the *Memoirs of the National Academy of Sciences*, Vol. 15.

Letter Grades	Percentage of foreign born criminals (761 cases)	Percentage of Arkansas draft (710 cases)	Percentage of North Carolina draft (702 cases)
E	22.9	15.9	14.3
D	11.7	17.2	17.1
C—	21.5	26.2	28.2
C	24.7	24.6	22.5
C+	12.1	12.7	12.5
B	5.5	2.8	3.8
A	1.5	.5	1.9

It will be seen that the foreign born criminals compare very favorably in the distribution of their Alpha scores with the native born white members of the North Carolina and Arkansas draft. With the 19.1 percentage of foreign born criminals superior to C let us compare the 16 per cent. of the Arkansas draft superior to C and the 18.2 per cent. of the North Carolina draft superior to C. With the 56.1 per cent. of foreign born criminals inferior to C let us compare the 59.3 per cent of the Arkansas draft inferior to C and the 59.6 per cent of the North Carolina draft inferior to C. That is, in spite of the seemingly obvious inferiority of foreign born criminals we find that their ability to make scores in the Army Alpha Test is equal if not superior to the ability of the native born white recruit from North Carolina and Arkansas to make scores in the same test. And yet there is the obvious handicap of language which the foreign born criminal undoubtedly is struggling against. Such inferiority as is read into the Alpha performances of the foreign born criminals must also be read into the Alpha performances of the white native born recruits from Arkansas and North Carolina.

But now the question arises whether the geographical distribution of intelligence which seems so marked in the case of the many records as reported in Volume 15 of the *Memoirs of the National Academy of Sciences* and is existing so obviously, as pointed out by the author in his article in *The Journal of Criminal Law and Criminology*, does not function just as significantly in the case of the foreign born whether criminals or members of the army draft. It is extremely unfortunate

that the voluminous report of mental testing in the army does not indicate to us the variation in the intelligence of foreign born members of the draft tested in different camps. That is, there is a perfectly obvious possibility that a given nationality tested at Camp Sherman might vary considerably from the same nationality tested at Camp Devens. The army report does not give us that information so we shall have to be satisfied with whatever probability might be established in considering the variation in the intelligence of the foreign born criminals tested in different states. Following is such a comparison of the distribution of Alpha scores made by the foreign born criminals tested in the five states of Ohio, Illinois, Indiana, New Jersey and Maryland.

	P. C. of Ohio foreign born criminals 291 cases	P. C. of Ill. foreign born criminals 191 cases	P. C. of Ind. foreign born criminals 43 cases	P. C. of N. J. foreign born criminals 206 cases	P. C. of Md. foreign born criminals 30 cases
0– 9	16.1	6.3	9.3	24.2	10.0
10– 14	9.3	4.0	2.3	9.7	10.0
15– 19	5.8	4.0	9.3	6.8	3.3
20– 24	9.6	3.7	9.3	2.4	3.3
25– 34	13.0	12.6	4.7	11.1	13.3
35– 44	9.6	10.0	7.0	10.7	3.3
45– 59	13.4	14.7	2.3	11.1	13.3
60– 74	10.0	16.3	34.9	6.8	13.3
75– 89	3.8	12.6	4.7	5.8	13.3
90–104	4.8	5.3	9.3	4.8	3.3
105–119	2.4	6.8		2.9	6.6
130–134	1.4	1.5	2.3	2.4	3.3
135–149	.7	1.5	2.3		
150–212		.5	2.3	.9	3.3

Transferring this distribution into letter grades the variations become even more obvious.

	P. C. of Ohio foreign born criminals	P. C. of Ill. foreign born criminals	P. C. of Ind. foreign born criminals	P. C. of N. J. foreign born criminals	P. C. of Md. foreign born criminals
Letter Grades					
E	25.4	10.3	11.6	33.9	20.0
D	15.4	7.7	18.6	9.2	6.6
C—	22.6	22.6	11.7	21.8	16.6
C	23.4	31.0	37.2	17.9	26.6
C+	8.6	17.9	14.0	10.6	16.6
B	3.8	8.3	2.3	5.3	9.9
A	.7	2.0	4.6	.9	3.3

In the above distribution we find that the percentage of E grades varies all the way from 10.3 per cent. to 33.9 per cent. and that the A grades vary all the way from .7 per cent. to 4.6 per cent. Even in the case of the C grades we find a variation from 17.9 per cent. to 37.2 per cent. We find that of the Ohio criminals only 13.1 per cent. are superior to C while 28.2 per cent. of the Illinois foreign born criminals give grades superior to C. Also we find that 63.4 per cent. of the Ohio foreign born criminals are inferior to a grade of C while only 40.6 per cent. of the Illinois foreign born criminals are inferior to C. This variation in the intelligence of foreign born criminals examined in different states is almost as marked as is the variation in intelligence of native born criminals examined in different states. That is, it is just as invalid to speak of the foreign born criminal as representing a type as it would be to speak of the native born criminal as representing a type or even to speak of the native born criminal as representing a type or even to speak of the criminal class as a type.

The problem of geographical distribution of the intelligence of foreign born criminals and foreign born members of the army draft might become somewhat more simplified if we compare the criminals of various nationalities with the army draft quota from the same nationalities. That is, it might be illuminating instead of speaking of the foreign born in general terms to speak definitely of the German born criminals and German born members of the American army, the Italian born criminals and Italian members of the army, etc. Following this plan let us first compare the intelligence distributed in terms of letter grades of the foreign born criminals born in England, Scotland, Canada and Ireland with the foreign born draft born in these same countries. Following is a comparison:

Letter Grades	P. C. of foreign born draft born in England Scotland Canada Ireland (695 cases)	P. C. of criminals born in England Scotland Canada Ireland (125 cases)
E	10.8	8.0
D	9.7	6.4
C—	20.0	12.0
C	28.8	32.8
C+	18.2	24.0
B	8.6	11.2
A	4.0	5.6

It will be seen that a definite comparison bears the characteristics pointed out in previous publications concerning the intelligence of white native born criminals. That is, criminals born in England, Scotland, Canada and Ireland seem definitely superior to the members of the draft born in these same countries. While 40.8 per cent. of the criminals made a grade superior to C only 30.8 per cent. of the foreign born draft in the same countries made a grade superior to C. While 26.4 per cent. of the criminals born in the different countries made a grade inferior to C. 40.5 per cent. of hte foreign born draft from these same countries made a grade inferior to C. Does the similarity of this comparison with the comparison of native born criminals and members of the draft indicate that among the English speaking and native born peoples tested by the Army Alpha the problem of intelligence is of more relative importance while among the non-English speaking foreign born peoples the problem of feeble-mindedness is of greater relative importance in the investigation of criminal behavior? But before we come to any conclusions in this matter let us consider some of the other nationalities.

Following is a comparison of the German born criminals with the German members of the draft:

Letter Grades	P. C. of foreign born draft born in Germany (217 cases)	P. C. of criminals born in Germany (84 cases)
E	6.0	4.7
D	11.5	10.7
C—	26.7	14.2
C	27.6	32.1
C+	17.1	28.6
B	6.4	8.4
A	4.6	1.2

We find in the case of the Germans that 38.2 per cent. of the criminals are superior to C while only 28.1 per cent. of the German born draft is superior to C. 29.6 per cent. of the German born criminals are inferior to C while 44.2 per cent. of the German born draft is inferior to C. So in the case of the Germans also we are justified in assuming that the criminals not only are not inferior mentally to the draft group but are even perceptibly superior in their ability to make scores in the Army Alpha test.

Proceeding to a comparison of the Italian born criminals with the Italian members of the draft we have the following:

Letter Grades	P. C. of foreign born draft born in Italy (724 cases)	P. C. of criminals born in Italy (143 cases)
E	30.4	41.2
D	15.1	14.0
C—	26.6	27.3
C	19.2	11.2
C+	6.2	4.2
B	1.8	2.1
A	.7	

In the case of the Italians only 6.3 per cent. of the criminals made a grade superior to C while 8.7 per cent. of the Italian born members of the draft made a grade superior to C. We also find that 82.5 per cent. of the Italian born criminals made a score inferior to C while 72.1 per cent. of the Italian born members of the draft made a grade inferior to C. So in the case of the Italians there seems to be a distinct mental inferiority even though both distributions reveal a mode which lies in C.

Now let us make the same comparison of the Austrian criminals and members of the army draft. Following is such a comparison:

Letter Grades	P. C. of foreign born draft born in Austria (126 cases)	P. C. of criminals born in Austria (100 cases)
E	8.0	30.0
D	8.7	13.0
C—	37.3	19.0
C	28.6	25.0
C+	11.9	10.0
B	2.4	3.0
A	1.6	1.0

It is observed that 14 per cent. of the Austrian born criminals made a score superior to C while 15.9 per cent. of the Austrian born draft made a score superior to C. It is also observed that 62 per cent. of the Austrian born criminals made a score inferior to C while 54 per cent. of the Austrian born members of the draft made a score inferior to C. So it is seen that in the case of the Austrians the criminals are not markedly inferior to the Austrian born members of the draft but that the Austrian born criminals give a decided bi-modal distribution of Alpha scores. That is, 30 per cent.

of the Austrian born criminals made a score of E while only 8 per cent. of the Austrian born members of the draft made a score of E. It will also be observed that while 19 per cent. of the Austrian born criminals made a score of C- that 37.3 per cent. of the Austrian born members of the draft made a score of C-. The resulting very decided differences of the forms of the two distribution curves makes it very difficult to determine whether Austrian born criminals are inferior, superior or generally equal to the Austrian born members of the draft.

Let us proceed to the Russian born criminals and members of the draft. Following is a comparison of the two groups:

	P. C. of foreign born draft born in Russia (709 cases)	P. C. of criminals born in Russia (80 cases)
Letter Grades		
E	17.2	26.2
D	12.0	9.9
C—	25.7	16.2
C	24.0	36.2
C+	13.2	6.2
B	7.2	3.7
A	1.7	1.2

It will be seen that 11.1 per cent. of the Russian born criminals made a score superior to C while 22.1 per cent. of the Russian born members of the draft made a score superior to C. It will also be observed that 52.3 per cent. of the Russian born criminals made a score inferior to C while 54.9 per cent. of the Russian born members of the draft made a score inferior to C. Here we have the interesting spectacle of one distribution showing a larger percentage of both superior and inferior individuals than the other distribution shows. That is, the Russian born members of the draft show both a larger percentage of superior individuals and a larger percentage of inferior individuals than the Russian born criminals show. It will be seen that this distribution is brought about by the unusually large number of Russian criminals who made a score of C. It should also be observed that both the different distributions are bi-modal, the distribution of criminals being especially so. Here also we find it difficult to decide whether the criminals are more intelligent, less intelligent or of equal intelligence with the members of the draft. But along with

this difference as in the case of the Austrians there is a decided bi-modality of the distribution curves.

It might be useful to us in the light of the definite difference to group together the criminals from so-called Southern and Eastern Europe and compare them with the foreign born draft from the same countries. Following is such a comparison:

Letter Grades	P. C. of foreign born draft born in Italy Greece Austria-Hungary Russia Poland (1,809 cases)	P. C. of criminals born in Italy Greece Austria-Hungary Russia Poland (430 cases)
E	22.5	32.6
D	13.8	13.0
C—	27.6	23.7
C	22.1	21.2
C+	9.2	6.0
B	3.9	3.0
A	1.1	.4

A definite lumping of cases shows us 9.4 per cent. of foreign born criminals from Southern and Eastern Europe making a score superior to C and 14.2 per cent. of the foreign born members of the draft coming from the same countries making a score superior to C. It also shows 69.3 per cent. of such criminals making a score inferior to C and 63.9 per cent. of such members of the foreign born draft making a score inferior to C. That is, we find among such criminals a relatively larger percentage of very low grade individuals mentally and a relatively higher percentage of high grade individuals than is revealed in the distribution of the foreign born draft. That is, in so far as there is any difference in average Alpha scores such foreign born criminals are certainly not superior to such foreign born members of the draft but in other words are distinctly inferior.

Now if we will make the same comparison of criminals born in so-called Central, Northern and Western Europe with the foreign members of the draft from the same countries we will get somewhat different results. Following is the comparison:

Letter Grades	P. C. of foreign born draft born in Germany England Scotland Denmark Sweden Norway Holland Ireland (2,055 cases)	P. C. of criminals born in Germany England Scotland Denmark Sweden Norway Holland Ireland (188 cases)
E	9.5	6.9
D	8.8	7.4
C—	22.6	14.3
C	30.0	32.9
C+	18.4	27.0
B	7.3	8.0
A	3.1	3.2

In a definite comparison we find 38.2 per cent. of such criminals making scores superior to C and 28.8 percent of such foreign born members of the draft making scores superior to C. We also find 28.6 per cent. of such criminals making scores inferior to C and 41.1 per cent. of such foreign born members of the draft making scores inferior to C. So in this comparison the relative superiority of the criminals is more marked.

Probably we are justified in assuming for the time being at least that the question previously raised may be answered in the affirmative. That is, the so-called races and nationalities give us still more superior criminals while so-called inferior races and nationalities give us still more inferior criminals. Certainly this complicates to a tremendous degree the entire problem of criminal intelligence.

It might be interesting at this point to consider a comparison of the Canadian born criminals with the Canadian born members of the draft. Following is such a comparison:

Letter Grades	P. C. of foreign born draft born in Canada (702 cases)	P. C. of criminals born in Canada (46 cases)
E	6.1	8.7
D	9.7	8.7
C—	18.8	10.8
C	31.2	34.8
C+	20.0	17.4
B	9.8	15.2
A	4.5	4.4

In the above comparison we find 37 per cent. of the Canadian born criminals making a score superior to C while 34.3 per cent. of the Canadian born members of the draft made a score superior to C. Also that 28.2 per cent. of the Canadian born criminals made a score inferior to C while 34.6 per cent. of the Canadian born members of the draft made a score inferior to C. So a comparison of the Canadian born criminals with the Canadian born members of the draft indicates at least a slight superiority on the part of the criminals. Of course Canada is settled chiefly by emigrants from Western Europe.

(To be continued)

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A LABORATORY STUDY OF FEAR: THE CASE OF PETER

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As part of a genetic study of emotions[1], a number of children were observed in order to determine the most effective methods of removing fear responses.

The case of Peter illustrates how a fear may be removed under laboratory conditions. His case was selected from a number of others for the following reasons:

1. Progress in combating the fear reactions was so marked that many of the details of the process could be observed easily.

2. It was possible to continue the study over a period of more than three months.

3. The notes of a running diary show the characteristics of a healthy, normal, interesting child, well adjusted, except for his exaggerated fear reactions. A few descriptive notes show something of his personality:

> Remarkably active, easily interested, capable of prolonged endeavor . . . . A favorite with the children as well as with the nurses and matrons . . . Peter has a healthy passion for possessions. Everything that he lays his hands on is his. As this is frequently disputed by some other child, there are occasional violent scenes of protest. These disturbances are not more frequent than might be expected in a three-year-old, in view of the fact that he is continually forced to adjust to a large group of children, nor are they more marked in Peter's case than in others of his age. Peter's I. Q. at the age of 2 years and 10 months was 102 on the Kuhlmann Revision of the Binet. At the same time he passed 5 of the 3 year tests on the Stanford Revision. In initiative and constructive ability, however, he is superior to his companions of the same mental age.

4. This case is a sequel to one recently contributed by Dr. Watson and furnished supplementary material of interest in a genetic study of emotions. Dr. Watson's case illustrated how a fear could be produced experimentally under laboratory conditions[2]. A brief review follows: Albert, eleven months

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[1]The research was conducted with the advice of Dr. John B. Watson, by means of a subvention granted by the Laura Spelman Rockefeller Memorial to the Institute of Educational Research of Teachers' College.

[2]Watson, J. B., and R. R. Studies in Infant Psychology, Scientific Monthly, December 1921.

of age, was an infant with a phlegmatic disposition, afraid of nothing "under the sun" except a loud sound made by striking a steel bar. This made him cry. By striking the bar at the same time that Albert touched a white rat, the fear was transferred to the white rat. After seven combined stimulations, rat and sound, Albert not only became greatly disturbed at the sight of a rat, but this fear had spread to include a white rabbit, cotton wool, a fur coat, and the experimenter's hair. It did not transfer to his wooden blocks and other objects very dissimilar to the rat.

In referring to this case, Dr. Watson says, "We have shown experimentally that when you condition a child to show fear of an animal, this fear transfers or spreads in such a way that without separate conditioning he becomes afraid of many animals. If you take any one of these objects producing fear and uncondition, will fear of the other objects in the series disappear at the same time? That is, will the unconditioning spread without further training to other stimuli?"

Dr. Watson intended to continue the study of Albert in an attempt to answer this question, but Albert was removed from the hospital and the series of observations was discontinued.

About three years later this case, which seemed almost to be Albert grown a bit older, was discovered in our laboratory.

Peter was 2 years and 10 months old when we began to study him. He was afraid of a white rat, and this fear extended to a rabbit, a fur coat, a feather, cotton wool, etc., but not to wooden blocks and similar toys. An abridgment of the first laboratory notes on Peter reads as follows:

> Peter was put in a crib in a play room and immediately became absorbed in his toys. A white rat was introduced into the crib from behind. (The experimenter was behind a screen). At sight of the rat, Peter screamed and fell flat on his back in a paroxysm of fear. The stimulus was removed, and Peter was taken out of the crib and put into a chair. Barbara was brought to the crib and the white rat introduced as before. She exhibited no fear but picked the rat up in her hand. Peter sat quietly watching Barbara and the rat. A string of beads belonging to Peter had been left in the crib. Whenever the rat touched a part of the string he would say "my beads" in a complaining voice, although he made no objections when Barbara touched them. Invited to get down from the chair, he shook his head, fear not yet subsided. Twenty-five minutes elapsed before he was ready to play about freely.

The next day his reactions to the following situations and objects were noted:

Play room and crib	Selected toys, got into crib without protest
White ball rolled in	Picked it up and held it
Fur rug hung over crib	Cried until it was removed
Fur coat hung over crib	Cried until it was removed
Cotton	Whimpered, withdrew, cried
Hat with feathers	Cried
Blue woolly sweater	Looked, turned away, no fear
White toy rabbit of rough cloth	No interest, no fear
Wooden doll	No interest, no fear

This case made it possible for the experiment to continue where Dr. Watson had left off. The first problem was that of "unconditioning" a fear response to an animal, and the second, that of determining whether unconditioning to one stimulus spreads without further training to other stimuli.

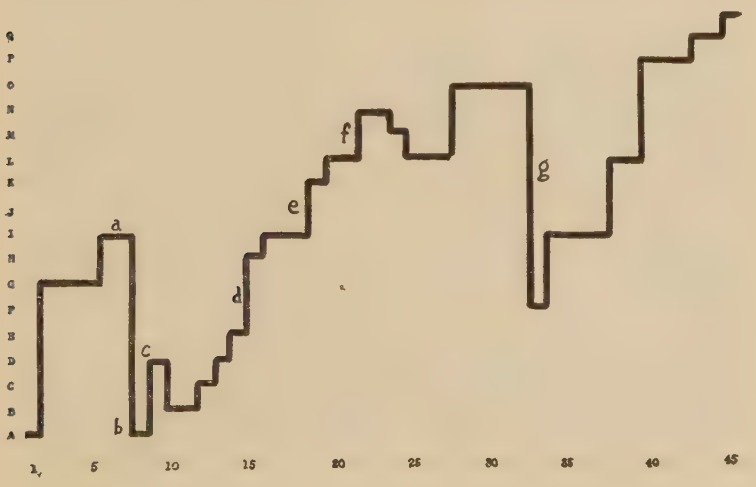
From the test situations which were used to reveal fears, it was found that Peter showed even more marked fear responses to the rabbit than to the rat. It was decided to use the rabbit for unconditioning and to proceed as follows: Each day Peter and three other children were brought to the laboratory for a play period. The other children were selected carefully because of their entirely fearless attitude toward the rabbit and because of their satisfactory adjustments in general. The rabbit was always present during a part of the play period. From time to time Peter was brought in alone so that his reactions could be observed and progress noted.

From reading over the notes for each session it was apparent that there had been improvement by more or less regular steps from almost complete terror at sight of the rabbit to a completely positive response with no signs of disturbance. New situations requiring closer contact with the rabbit had been gradually introduced and the degree to which these situations were avoided, tolerated, or welcomed, at each experimental session, gave the measure of improvement. Analysis of the notes on Peter's reactions indicated the following progressive steps in his degrees of toleration:

A. Rabbit anywhere in the room in a cage causes fear reactions.
B. " 12 feet away in cage tolerated.
C. " 4 " " " " "
D. " 3 " " " " "
E. " close " " "
F. " free in room tolerated.
G. " touched when experimenter holds it.
H. " touched when free in room.
I. " defied by spitting at it, throwing things at it, imitating it.

J. Rabbit allowed on tray of high chair.
K. Squats in defenseless position beside rabbit.
L. Helps experimenter to carry rabbit to its cage.
M. Holds rabbit on lap.
N. Stays alone in room with rabbit.
O. Allows rabbit in play pen with him.
P. Fondles rabbit affectionately.
Q. Lets rabbit nibble his fingers.

These "degrees of toleration" merely represented the stages in which improvement occurred. They did not give any indications of the intervals between steps, nor of the plateaus, relapses, and sudden gains which were actually evident. To show these features a curve was drawn by using the seventeen steps given above as the Y axis of a chart and the experimental sessions as the X axis. The units are not equal on either axis, as the "degrees of toleration" have merely been set down as they appeared from consideration of the laboratory notes with no attempt to evaluate the steps. Likewise the experimental sessions were not equi-distant in time. Peter was seen twice daily for a period and thence only once a day. At one point illness and quarantine interrupted the experiments for two months. There is no indication of these irregularities on the chart. For example, along the X axis, 1 represents the date December 4th when the observation began. 11 and 12 represent the dates March 10 A. M. and P. M. (from December 17 to March 7, Peter was not available for study).



The question arose as to whether or not the points on the Y axis which indicated progress to the experimenter represented real advance and not merely idiosyncratic reactions of the subject. The "tolerance series" as indicated by the experimenter was presented in random order to six graduate students and instructors in psychology to be arranged so as to indicate increase in tolerance, in their judgment. An average correlation of .70 with the experimenter's arrangement was found for the six ratings. This indicates that the experimenter was justified from an a priori point of view in designating the steps to be progressive stages.

The first seven periods show how Peter progressed from a great fear of the rabbit to a tranquil indifference and even a voluntary pat on the rabbit's back when others were setting the example. The notes for the seventh period (see a on chart) read:

> Laurel, Mary, Arthur, Peter playing together in the laboratory. Experimenter put rabbit down on floor. Arthur said, "Peter doesn't cry when he sees the rabbit come out." Peter, "No." He was a little concerned as to whether or not the rabbit would eat his kiddie car. Laurel and Mary stroked the rabbit and chattered away excitedly. Peter walked over, touched the rabbit on the back, exulting, "I touched him on the end."

At this period Peter was taken to the hospital with scarlet fever. He did not return for two months.

By referring to the chart at (b), it will be noted that the line shows a decided drop to the early level of fear reaction when he returned. This was easily explained by the nurse who brought Peter from the hospital. As they were entering a taxi at the door of the hospital, a large dog, running past, jumped at them. Both Peter and the nurse were very much frightened, Peter so much that he lay back in the taxi pale and quiet, and the nurse debated whether or not to return him to the hospital. This seemed reason enough for his precipitate descent back to the original fear level. Being threatened by a large dog when ill, and in a strange place and being with an adult who also showed fear, was a terrifying situation against which our training could not have fortified him.

At this point (b) we began another method of treatment, that of "direct conditioning." Peter was seated in a high chair and given food which he liked. The experimenter brought the rabbit in a wire cage as close as she could without arousing a response which would interfere with the eating.

Through the presence of the pleasant stimulus (food) whenever the rabbit was shown, the fear was eliminated gradually in favor of a positive response. Occasionally also, other children were brought in to help with the "unconditioning." These facts are of interest in following the charted progress. The first decided rise at (c) was due to the presence of another child who influenced Peter's reaction. The notes for this day read:

Lawrence and Peter sitting near together in their high chairs eating candy. Rabbit in cage put down 12 feet away. Peter began to cry. Lawrence said, "Oh, rabbit." Clambered down, ran over and looked in the cage at him. Peter followed close and watched.

The next two decided rises at (d) and (e) occurred on the day when a student assistant, Dr. S., was present. Peter was very fond of Dr. S. whom he insisted was his "papa." Although Dr. S. did not directly influence Peter by any overt suggestions, it may be that having him there contributed to Peter's general feeling of well being and thus indirectly affected his reactions. The fourth rise on the chart at (f) was, like the first, due to the influence of another child. Notes for the 21st session read:

Peter with candy in high chair. Experimenter brought rabbit and sat down in front of the tray with it. Peter cried out, "I don't want him," and withdrew. Rabbit was given to another child sitting near to hold. His holding the rabbit served as a powerful suggestion; Peter wanted the rabbit on his lap, and held it for an instant.

The decided drop at (g) was caused by a slight scratch when Peter was helping to carry the rabbit to his cage. The rapid ascent following shows how quickly he regained lost ground.

In one of our last sessions, Peter showed no fear although another child was present who showed marked disturbance at sight of the rabbit.

An attempt was made from time to time to see what verbal organization accompanied this process of "unconditioning." Upon Peter's return from the hospital, the following conversation took place:

E.: (experimenter) What do you do upstairs, Peter? (The laboratory was upstairs).
P.: I see my brother. Take me up to see my brother.
E.: What else will you see?
P.: Blocks.

Peter's reference to blocks indicated a definite memory as he played with blocks only in the laboratory. No further response of any significance could be elicited. In the laboratory two days later (he had seen the rabbit once in the meantime), he said suddenly, "Beads can't bite me, beads can only look at me." Toward the end of the training an occasional "I like the rabbit," was all the language he had to parallel the changed emotional organization.

Early in the experiment an attempt was made to get some measure of the visceral changes accompanying Peter's fear reactions. On one occassion Dr. S. determined Peter's blood pressure outside the laboratory and again later, in the laboratory while he was in a state of much anxiety caused by the rabbit's being held close to him by the experimenter. The diastolic blood pressure changed from 65 to 80 on this occasion. Peter was taken to the infirmary the next day for the routine physical examination and developed there a suspicion of medical instruments which made it inadvisable to proceed with this phase of the work.

Peter has gone home to a difficult environment but the experimenter is still in touch with him. He showed in the last interview, as on the later portions of the chart, a genuine fondness for the rabbit. What has happened to the fear of the other objects? The fear of the cotton, the fur coat, feathers, was entirely absent at our last interview. He looked at them, handled them, and immediately turned to something which interested him more. The reaction to the rats, and the fur rug with the stuffed head was greatly modified and improved. While he did not show the fondness for these that was apparent with the rabbit, he had made a fair adjustment. For example, Peter would pick up the tin box containing frogs or rats and carry it around the room. When requested, he picked up the fur rug and carried it to the experimenter.

What would Peter do if confronted by a strange animal? At the last interview the experimenter presented a mouse and a tangled mass of angleworms. At first sight, Peter showed slight distress reactions and moved away, but before the period was over he was carrying the worms about and watching the mouse with undisturbed interest. By "unconditioning" Peter to the rabbit, he has apparently been helped to overcome many superfluous fears, some completely, some to a less degree. His tolerance of strange animals and unfamiliar situations has apparently increased.

The study is still incomplete. Peter's fear of the animals which were shown him was probably not a directly conditioned fear. It is unlikely that he had ever had any experience with white rats, for example. Where the fear originated and with what stimulus, is not known. Nor is it known what Peter would do if he were again confronted with the original fear situation. All of the fears which were "unconditioned" were transferred fears, and it has not yet been learned whether or not the primary fear can be eliminated by training the transfers.

Another matter which must be left to speculation is the future welfare of the subject. His "home" consists of one furnished room which is occupied by his mother and father, a brother of nine years and himself. Since the death of an older sister, he is the recipient of most of the unwise affection of his parents. His brother appears to bear him a grudge because of this favoritism, as might be expected. Peter hears continually, "Ben is so bad and so dumb, but Peter is so good and so smart!" His mother is a highly emotional individual who can not get through an interview, however brief, without a display of tears. She is totally incapable of providing a home on the $25 a week which her husband steadily earns. In an attempt to control Peter she resorts to frequent fear suggestions. "Come in Peter, some one wants to steal you." To her erratic resorts to discipline, Peter reacts with temper tantrums. He was denied a summer in the country because his father "forgets he's tired when he has Peter around." Surely a discouraging outlook for Peter.

But the recent development of psychological studies of young children and the growing tendency to carry the knowledge gained in the psychological laboratories into the home and school induce us to predict a more wholesome treatment of a future generation of Peters.

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Accepted for publication by
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A GENETIC SCHEME FOR THE CLASSIFICATION OF PERSONALITIES.*

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Current discussions of personality agree pretty well in their conception of what the term personality shall designate. This has to my mind been best expressed by Warren where he says that "personality is the entire organization of a human being at any stage of his development. It embraces all four phases of human character: intellect, temperament, skill, and morality, and every attitude that has been built up in the course of one's life" (11, page 360). There has long been, as every one knows, no lack of recognition of the fact that personalities differ and there have been not a few attempts to classify these differences. It is here in our attempts to bring order out of the chaos of our vague and casual recognition of personality differences that we find most confusion. We need satisfactory concepts for classification and we need names for the concepts. Many quite diverse schemes are being offered for consideration. Each shows the bias of the profession or specialization of its author: one bears the ear marks of psychiatry, another of physiology, another of sociology, another of Hebartian philosophy (psychoanalysis). So it may not be inappropriate to present yet another attempt to frame a scheme for the classification of personalities which if biased at all will bear the ear marks of one who has given much thought to genetic psychology.

Some time ago I published a paper (3) in which I attempted to show how all human beings could be ranged on a scale of attentive behavior concepts if framed in terms of the conditions of attention as presented by Pillsbury* (8, Chap. 3) and upon the content of those conditions. It seemed to me then that we might characterize individual human beings quite regardless

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*It has since occurred to me that the terms innate and acquired more exactly express his thought than do the terms objective and subjective which he uses. Hence I shall in this paper substitute innate for Pillsbury's objective and acquired for this subjective conditions of attention.

of sex or age according to the place where each apparently belonged upon a scale ranging from that individual whose attention was determined exclusively by the innate conditions of attention to that rather hypothetical individual whose attention was determined by acquired conditions of attention the content of which was largely abstract in nature. Perhaps my idea of this scale can be more clearly presented through the growth experience of one who is now an absent-minded university professor and whose predominant if not exclusive interest in life is the use of the aorist tense (of course this person exists only in my imagination). I believe that most readers will be willing to dub such a person introverted. But he was not always introverted. Time was when he was governed entirely by his innate conditions of attention, in his infancy of course, and then he was a thorough-going extravert. In those days he found, to quote Jung, "the unconditioned values outside himself" (5). Years passed and the infant grew rapidly into a boy whose attention behavior was still governed by the innate conditions of attention pretty largely but far from exclusively. All the acquired conditions had begun to function but the content of these acquired conditions was decidedly concrete in nature. His ideas in mind, his purposes, his educational experience so far had included little that could be called abstract. In order to make him understand it had been necessary to present abstract material to him in a concrete fashion. He was still an extravert. Gradually, however, more and more abstract experience became possible and actual with the consequence that more and more abstract content was built into the acquired conditions of his attention. By the time of his later student days or earlier years of his professional career he had acquired an amount of abstract content in his attention determiners so that there were hours, days, weeks and even months when he could have been properly called introverted. Jung laid down as his criterion of introversion the finding of the unconditioned values within one's self. In these periods the young man found the unconditioned values within himself. But he was still young. He slipped over with ease to days, weeks, or even longer periods in which his life was again as extraverted as it was in his youth, as much controlled by the innate conditions of attention and the concrete content of his acquired conditions of attention as it ever was. This ability to oscillate between what is clearly introversion and what is as clearly extraversion, to find values of life frequently in each phase of activity, is

what I have called (3) ambiversion. As the years pass and the man becomes more and more absorbed in his philological studies he becomes less and less influenced by those conditions of attention which had once made him an extravert and later kept him ambiverted. The passage of the years of ever increasing absorption eventually produced an individual who is lost to the world of sense, of the affairs of men and action. He is now almost completely dominated by acquired conditions of attention whose content is abstract. He is almost completely introverted.

When I prepared that paper my aim was merely to show the possibility of translating the then existing conceptions of introversion extraversion into terms of general psychology. Subsequent developments in the intro-extraversion literature led me to consider the place of the scale of attention behavior forms just described in a conception of personality and personality differences. These differences in terms of attention conditions obviously fall into that group of factors which Warren calls attitudes in the definition already quoted. Grouped in this manner they present a convenient dimensional sort of concept for the classification of personalities, but if put into practical use it will soon be found that two personalities equally introverted or equally extraverted are nevertheless quite different. Personalities cannot be satisfactorily classified in a one dimensional scheme because of the many different factors in personality. Hence I am proposing this scheme of four psychological dimensions supplemented by several temperamental or somatological groups. In this scheme introversion-extraversion, conceived in terms of attention conditions, constitutes one dimension.

My second dimension is the scale of intelligence. Differences here are so well established discussion is unnecessary. Even the critics of the tests recognize that intelligence grows or unfolds up to a certain point beyond which for some reason there is a little change and that mature persons manifest marked differences of intelligence. Whatever one may think of the tests one may safely think of any person in terms of his place on a theoretically perfect scale of intelligence. And so conspicuous is the effect upon the personality of the degree of intelligence it would be folly to omit the intelligence dimension from any scheme for the classification of personality. That the intelligence may have a limiting or even directing effect upon the content of the attention conditions I freely admit.

But the inter-relation of these dimensions is another story from that which I wish to present here.

My third dimension may be a bit more difficult of exposition. For a lack of any satisfactory term I am calling it the noetic dimension. We have long since agreed that the child does not come into the world with ready made ideas. It can only sense it cannot think. And this constitutes the beginning of the noetic dimension, the purely sensory experience of infancy. As we have so long taught our beginning students, perceptive experience is the consequence of sensory experience and is dependent thereon (how the Gestalt psychologists may force us to alter this seems insignificant to the present argument). The imaginative life is the next acquisition or achievement. It comes, to be sure, fairly earlier in childhood but not until after there has been a certain considerable amount of sensory and perceptive experience, that which supplies the material for imagination. The amount of this imaginative life in childhood is always amazing to us when we pause and watch our children. The phantastic notions which they conjure up and the absurdly impossible tales to which they listen with glee but indicates how little they are troubled by the laws of inductive and deductive logic. Inconsistencies troubled them not at all. Between imagination and the achievement of logical thinking there seems to be an intermediary stage. Some of us have about concluded that we have many students who can never be trained beyond this intermediary stage in which they readily make the most impossible inductions and the most outrageous deductions, in which their "hunch", their happy thought, their convenient notion acquired at haphazard, is defended against the carefully thought out positions of the instructor with a willingness which speaks more for their enthusiasm than it does for their knowledge of the ways of valid thought. For them scientific thinking is achieved only after a great struggle if at all. But how shall I characterize this stage of immature modes of thought? It is beyond the imaginative and partakes of the logical but it is clearly undeveloped. Lacking a more satisfactory term I am tentatively calling it the intuitive stage. Pillsbury speaks in his Psychology of Reasoning (9, page 198) of the "fecund imagination" of youth and that many are "overhasty in accepting conclusions". Conclusions, or more technically inferences, are made with ease and they are too easily believed. If there be any attempt at proof the methods used are but crude and little better than a defence mechanism or

rationalization. This kind of reasoning we all see much of. It is the kind usually attributed in generous quantity to the female sex. If I fail to agree to that attribution it is not because I am in any the slightest manner biased by gallantry but it is because I see so much disinclination to rigorously test and justify inferences made, so much shoddy thinking, and such overwhelming willingness to believe, and all of this apparently irrespective of sex.

From mere sensory experience at one end this third dimension then ranges clear through perception, imagination and intuitive thinking to the achievement of skill in the testing of inferences, and more than skill to the habit of logically defensible thought. This seems to me to be a scale or dimension by which individuals may be measured or classified quite as properly as by either the dimension in terms of conditions of attention or that in terms of the intelligence. I have called this the noetic dimension. I am not wholly satisfied with the word noetic, but there seems less to be said against it than against the several words which I have tried and discarded. It should not be too hastily thought that I have confused intelligence and my noetic dimension. I am thinking of intelligence as something more fundamental, the degree of it being perhaps innately determined. To be sure each individual's intelligence rises to a maximum somewhere in the teens and in the use of his intelligence every individual must make use of those forms of behavior which I have included in the noetic dimension. But when I think of a person in terms of the noetic dimension I think in terms of that form of thought which dominates his life. I know people of high intelligence who prefer to live and do live at the intuitive stage in the noetic dimension. I know others who have sufficient intelligence so that they were once trained to some degree of logical thought but whose lives are not dominated by logical thinking nor even by intuitive thinking. they live in a world of their own making, they are in the imaginative stage of my noetic dimension. It was the very failure to distinguish between the intelligence and the noetic dimensions which led Jung into much of the confusion which seems to me to characterize his recent elaboration of the introverted-extraverted classification of personalities into psychological types (6). In terms of Warren's definition of the content of personally he noetic dimension is of course one set of attitudes as the introversion-extraversion dimension is another set.

There is probably a fourth dimension, the moral. Tests for

moral differences or degrees of development of moral judgment are now on the market and I find in the classification of personalities that the moral difference is often the distinguishing feature. Warren, it will be recalled, includes the moral as one of the four phases of human character. It may be that experimental study will reduce this dimension to certain combinations of or variants within the other three dimensions but for the present I believe it better to let it stand as a fourth dimension.

These four dimensions must be supplemented by the recognition of several diathesic differences or types of a (probably) non-dimensional nature. Take two very different personalities and attempt to classify them by this dimensional scheme and it may be that they come out about the same so far as their degree of extra-introversion, their intelligence quotient, and their place in the noetic and the moral scales characterize them. The difference will be found in their diatheses. How many of these should be recognized I am uncertain. Berman has offered (2) an impressive list: the thyrocentric, the pituitocentric, the adrenocentric, the thymocentric, the gonadocentric, and the still longer list of hyphenates. Perhaps we shall be obliged to accept all of these some day but but for the present I am inclined to think that Berman's descriptions of trait groups is confused because of the failure to recognize differences which are due to the training of the central nervous system, which could be expressed in terms of the dimensions here proposed, and to which his glandular conditions may well be secondary. For the present we may, I think, wisely recognize three diatheses: the balanced, the cyclothymic (and its subdivisions), and the epileptic. These are doubtless attributable to some fundamental peculiarity of the physiology doubtless largely conditioned by the functioning of the endocrine system.

To classify any person by this scheme it is necessary to determine as accurately as available means permit the place in each dimension which best characterizes that aspect of the personality and to decide or determine the diathesis. The following suggestions although of course quite speculative and subject to much difference of opinion reveal possible uses of the scheme. Tom Jones: Extraverted, normal or average intelligence, noetically imaginative to intuitive, morality low to average, of balanced diathesis. Squire Western: extraverted, dull intelligence, noetically perceptive, morally low, of cyclothymic (irascible) diathesis. Beau Brummell: extraverted,

superior intelligence, noetically intuitive, morally low to average, of balanced or cyclothymic diathesis. Emerson: Introverted, very superior intelligence, noetically intuitive, morally very superior, of balanced diathesis. Kant: Introverted, very superior intelligence, noetically logical, morally very superior, of balanced diathesis. Such classification is of course sadly handicapped by the lack of terms with which to indicate different places in a given dimension.

Comparison of this scheme with some of the many now available will reveal that it includes them and harmonizes their apparent oppositions. Perhaps the most audacious and brilliant of contemporary schemes is that recently proposed by Jung in his Psychological Types (6). He has there elaborated his former extraversion-introversion scheme by separating each of those groups into four functional types. These are the thinking type, the feeling type, the intuitive type and the sensory type. The thinking types and the feeling types are grouped as rational, while the intuitive and the sensory types are said to be irrational. The extraverted thinking type is described as logical, rational, objectively minded, unesthetic, in fact displaying but a modicum of feeling. Darwin is said to be an example of this kind of individual. The material with which such a person thinks comes from without and the thinker's conclusions have a "preferential direction outwards". Then we are asked to recognize a complementary type. Notice that introversion is not the complement here but feeling. The extraverted feeling type has its feelings apparently more prominent than its thinking. And these feelings are "oriented by objective data". A picture is felt to be beautiful because it bears a well known signature, or because it hangs in the living room of a friend. The wide spread support of philanthropic, social and cultural enterprises is dependent upon this kind of convention determined tradition governed feeling. When this type appears in a woman, and Jung says that it is almost always female, then this woman will love and marry the kind of person who is socially suitable and proper to her. Thinking, as an independent function, is said to be repressed. The introverted rational types present the converse of the above. The introverted thinker Jung says is well represented by Immanuel Kant. Such a type is "oriented by the subjective factor . . . New views rather than the perception of new facts are its main concern . . . Its aim is never concerned with an intellectual reconstruction of concrete reality, but with the shaping of that

dim image into a resplendent idea". It has a "dangerous tendency to coerce facts into the shape of its image, or by ignoring them altogether, to unfold its phantasy image in freedom . . . It creates theories for the sake of theories". The introverted feeling type is likewise "determined principally by the subjective factor". Its responses are in the form of feeling which "apparently depreciates the object . . . It strives after an inner intensity, to which at the most, objects contribute only an accessory stimulus . . . the depths of this feeling can only be divined—they can never be clearly comprehended". Such people are mostly "silent, inaccessible, and hard to understand . . . their true motives generally remain concealed". They seem to others to be cold and never guilty of an enthusiasm. Closer acquaintance and scrutiny, however, will discover them to have very deep intense feelings of a religious or esthetic nature.

In the extraverted sensation type the "subjective share of sensation . . . is either inhibited or repressed". Their constant motive is sensory experience and to use each sense experience in turn as a guide to further sense experience. In the extraverted intuitive type we are told that "intuition as the function of unconscious perception is wholly directed upon outer objects . . . thinking, feeling, and sensation are relatively repressed . . . sensation disturbs intuition's clear, unbiased, naïve awareness with its importunate sensuous stimuli . . . . he actually has sensations, but he is not guided by them *per se*, merely using them as directing points for his distant vision". One so intuitively dominated has a "keen nose for things in the bud pregnant with future promise". The introverted sensation type is guided by just what happens . . . is ornamented by the intensity of the subjective sensation-constituent released by the objective stimulus". I gather that Jung is speaking of those whom we so often describe as living in a world of their own making, seeing the world as they expect it to be and hearing what they expect to hear. Its correlate, the introverted intuitive type, "moves from image to image, chasing after every possibility in the teeming womb of the unconscious, without establishing any connection between the phenomenon and himself". This type is that of the mystic, the dreamer, the seer, the prophet. As the extraverted intuitive is forever seeing the rainbow beyond and ignoring the present so the introverted intuitive is forever conceiving the possibilities in a subjective, interpretative, prophetic but equally irrational manner.

This summary of Jung's presentation, long as it is, may not convey in every detail an accurate representation of Jung's thought. For that the reader must wade through the original. I confess I find Jung rather hard reading because of the confusing jumble of literary, philosophical, and psychoanalytic terms and phrases, with familiar psychological terms used in unfamiliar ways. And yet it is a sweepingly comprehensive and scholarly attempt to classify personalities. Even at first reading there seems in it much that corresponds with the facts of daily experience. We all of us know the Darwinian type of mind and the Kantian type, we know the people who feel conventionally and those who seem to feel very little but who upon closer acquaintance are found to have a concealed but very intense undercurrent of feeling, we know the luncheon-clubbing, sport be-dominated kind, and we know those who live in a world of their own making and never seem aware of the fact, we know the rainbow chasing man in business whose vision of the great things just beyond the horizon forever prevents his attending properly to the present, and we know the impractical, irrational, unworldly prophet, seer or visionary. Such as these seem certainly to be a part of the world in which we live.

My purpose is of course to show the relationship of Jung's scheme to the one I am proposing, and perhaps to argue for the superiority of my own. But before I do so I must buttress my position by pointing out what seem to me certain marked defects in Jung's thinking. Every individual is not supposed by Jung to be a perfect exemplar of some one type. He quite properly recognizes that there are intermediate gradations. But he does not anywhere make clear how these eight types are to be thought of so that one can place in the scheme these mixed or imperfect types. There is apparently the possibility of infinite gradations between extraverted thinking and extraverted feeling, between extraverted thinking and introverted thinking, between introverted thinking and introverted feeling, between extraverted feeling and introverted feeling, between extraverted sensation and extraverted intuition, between extraverted sensation and introverted sensation, between introverted sensation and introverted intuition, between extraverted intuition and introverted intuition and what is still more difficult to follow between the irrational and the rational, that is between a given degree of extraverted thinking-feeling and a corresponding degree of sensation-intuition and likewise between any

degree of introverted thinking-feeling and a corresponding degree of sensation-intuition. It is not easy to conceive these relationships in a genetic psychological fashion, nor to conceive them so as to include Jung's ever present notion of repression. Thinking for him seems to repress feeling, feeling represses thinking, extraversion represses introversion, thinking and feeling repress intuition-sensation, sensation represses intuition, intuition represses sensation, intuition-sensation represses thinking-feeling. If one represses the other then one must in each case be genetically older than the other. Freud and Jung have always recognized this in the past so far as I can recall. Certainly Freud recognized it in the development of his tripartite psyche and the intrapsychic censor, and Jung most conspicuously recognized it in the introduction to his Psychology of the Unconscious (7). There he vividly described the philogenetic history of mind beginning in sensory experience, passing through perceptual into imaginary or as he called it phantasy thinking and only later achieving logical thought. Apparently he forgot or abandoned that genetic scheme when he came to this presentation of types. And I believe that this abandonment is unfortunate, for had he stuck to that scheme of thinking it would have prevented much of the confusion he has fallen into. I suspect that he failed here also because of his attempt to explain at the same time the nature of mental abnormalities as the breaking out or breaking loose in each type of the tendencies which that type repressed. Everyone who has read his volume recalls how inadequately this is carried out and how incomplete and unsatisfactory are his explanations of the abnormal.

Now, omitting for the time being the repression concept and its implications, for I will attempt to show later how the abnormal may be fitted into this scheme, let us see how Jung's types fit this genetic scheme which I have presented in terms of its four dimensions and three diatheses. Take first Jung's extraverted thinking type for which he used Darwin as an example. In my scheme Darwin or any example of this type would be an individual whose conditions of attention are predominantly of the acquired class and largely concrete in content, in the intelligence dimension he would be high, and in the noetic dimension he would have achieved the niceties and habits of logical thought. A corresponding case of introverted thinking type, Kant, as Jung suggests, would not differ necessarily in any dimension except in the attentive dimen-

sion, he would be conditioned by acquired conditions of attention whose content was largely abstract in nature. Next think of Jung's intuitive types. They are not given to rigorous thinking but jump at conclusions and believe easily. These fit readily into my scheme for I have argued that intuitive thinking is next below logical in the genetic arrangement of the noetic dimension. Such people might be almost anywhere in the intelligence dimension, if their I. Q. were low then they have doubtless achieved as much as they have capacity for in the noetic dimension, but if their I. Q. happen to be high then they have for some reason never achieved more than the intuitive habit of thought when measured by the noetic dimension. Of course if they are extraverted or introverted depends upon the conditions of attention habitually functioning. And as for Jung's sensory types his title is of course absurd. He does not really mean sensory, because all of his language is couched in terms of perception. It should have been perception type and not sensory. In the noetic dimension these people are relatively undeveloped although I suspect if one should begin to examine actual cases one would find that they have developed farther than Jung's logic would imply. Very likely many of them would be in the neighborhood of the intuitive stage although they might not be above the imagination stage. In intelligence I suspect they are more often rather low, although it may be that because of their place in these other dimensions they have never been able to make good use of their intelligence. If they are extraverted then they are governed largely by the innate attention conditions and in so far as the acquired conditions operate their content is largely concrete in nature. If they are introverted then they are controlled by acquired attention conditions which are abstract in content but I doubt if many of these can be said to be very far introverted. I suspect that the difference which attracted Jung's attention was that difference between people primarily dominated by the innate conditions of attention and those dominated by acquired conditions the content of which is concrete in nature, a considerable difference no doubt but scarcely enough to warrant the distinction of introvert *vs.* extravert.

I have so far omitted to mention the feeling type. Here is where Jung got into trouble because of his failure to consider differences in intelligence. Why he should have omitted a gradation of differences so well established I cannot guess. But, recall his feeling type, the extraverted for instance. He

mentions the woman who always enjoys whatever is proper and conventional. She likes the picture because it bears a great name and hangs in her friend's parlor, she enjoys the poem because it was written by Browning whether she understands it or not, she loves the man who is eminently suitable to her. Propriety, convention, tradition, suitability make her happy and violations of these make her unhappy. This is not another type, it is merely a presentation of the feeling aspect of the life of a person of relatively low intelligence. Her noetic development might be even up to the intuitive level, but I suspect not much above the perceptive. And if extraverted, why of course she is at the innate and concrete acquired end of that scale. If such a degree of intelligence and noetic development happened to have attention conditions primarily acquired and abstract, which is quite possible, then she would conform perfectly to Jung's description of the introverted feeling type whom the world could not understand and thought cold and unenthusiastic. The world does not understand such because such are too stupid and too undeveloped noetically to make an intelligible manifestation of the feelings which they have. So in terms of their relative places in this combination of four dimensions I find it possible to range all of Jung's alleged types as well as any number of gradations.

Now suppose I try the adjustment of another well known scheme of personality classification. I refer to Rosanoff's (10) in which he described us all in terms of the psychoses, the anti-social, the cyclothymic, the autistic and the epileptic types. Attractive as this scheme is it must be observed that the description of a personality in terms of the underlying diathesis alone is as inadequate as the description of a personality in terms of extraversion-introversion alone, or of intelligence alone, or in terms of the noetic dimension alone, or of morality alone. Some of Rosanoff's list are clearly diatheses; some are not. The epileptic and the cyclothymic seem to be pervading disturbances of the physiology of the body, probably explainable in terms of endocrinology. Any place in any of the four dimensions or any combination of such might well be accompanied by an epileptic or a cyclothymic diathesis. The autistic I cannot think of as diathesic. Rosanoff compared the autistic to the dementia praecox. And I recall the marked drift today toward a functional interpretation of dementia praecox. Its normal correspondent then should be interpreted likewise. So I think of what Rosanoff has called

the autistic personality as one of any possible degree of intelligence, of probably as a rule no very high degree of achievement on the noetic scale, probably not much above the intuitive and with a predominance of the imaginative or phantasy stage. In the attention dimension we should find a predominance of the acquired conditions with abstract content, introverted, Jung calls it; the nature of this abstract content would be such as to select for attention the personal or possibly personal, and the persecutory or possibly persecutory, all of which would lead to the characteristic interpretations, almost paranoid, of the autistic person. If, of course, it should eventually be determined that dementia praecox is as much a matter of physiological disturbance as the epileptic and the cyclothymic why then we should be obliged to abandon this purely functional mode of interpretation and add one more to the list of diatheses. This does not, however, seem likely. The anti-social like the autistic I think of as an unfortunate distortion of thinking and primarily the unhappy consequence of an undesirable education, thinking of education of course in its most inclusive sense. The anti-social personality may be almost anywhere in the intelligence dimension, and almost anywhere in the noetic dimension, except probably the extremes. It is not likely that such would ever have achieved and be dominated by all the niceties of logical thought nor on the other hand have remained at the childish perceptive level. Again the source of distortion is in the content of the attentive conditions. There is such a peculiar selection of sensory and ideational material for attention as to produce the personality we call anti-social. I can think of this individual as being relatively extraverted or relatively introverted. If relatively introverted we have the "parlor Bolshevik" variety; if relatively extraverted we have the querulant paranoid variety. It is the consequence of their unfortunate education and the consequently peculiar content of their attention conditions.

Thus apparently two schemes of personality classification so diverse as those of Jung and Rosanoff can be harmonized through this dimensional-diathesic scheme. Others may fit into it equally well. The common distinction between men of thought and men of action is as obviously a distinction between introversion and extraversion as it is an inadequate classification of personality. Downey's work (4), see especially chapter four) seems to be the discovery of differences within what I have classified as diatheses in this scheme. The Allport study

(1) in most of its list of traits falls obviously within this dimensional-diathesic scheme, although a few of the traits do not articulate readily. I have said practically nothing of the vast possible range of differences in emotional reactions, and some of Allport's traits would come under this aspect of behavior, especially his ascendance-submission and some of his sociality traits. I think that my omission is not serious from the point of view of a general scheme for the classification of personalities. Whatever one's reservations may be concerning McDougall's scheme for instinct-emotion patterns and especially concerning the Shand-McDougall doctrine of sentiments I think we must agree that it is at least a first approximation to a representation of what takes place in the emotional development of an individual. Perhaps we shall eventually be obliged to make a scheme of classification of personalities which shall include recognition of these sentiment patterns, but for the present it seems to me unnecessary to so further complicate the scheme. These sentiments are intimately related to and conditioned by at least two and probably three of the dimensions. That emotional responses are conditioned by interpretations given to situations is a psychological commonplace. And these interpretations would fall into the material considered under the four dimensions. The sentiments likewise are centered about perceived objects or about conceptions and so again are conditioned by the content of the four dimensions. The greatest obstacle may seem to lie in the difference between those people who give free play to their emotions and those who seem never to do so, but a second thought will reveal that this difference is also, although indirectly, due to content already considered. These differences between the expression and the lack of expression of emotions is attributable to the sentiments which have been established. The self regarding sentiment in some people would be such as to check emotional expression while in others it might never do so. Important as a consideration of emotional behavior is, in the selection of people who have certain desired character traits, I believe that in the development of a scheme for the classification of personalities we may well treat it as secondary.

It is no part of my purpose to present here a scheme for the classification of abnormal personalities, but the mode of articulation of the abnormal with the scheme presented does merit consideration. Jung made an unsatisfactory attempt to

show that the abnormal form to which each of his types was prone was the eventual intrusion of the long repressed complementary tendencies. His discussion of these is rarely adequate and often hurriedly brief and vague. He left far too much to the imagination, guess work or good will of the reader. To think of the abnormality as an intrusion from the repressed opposite trait is well nigh impossible when as I have already shown there are, according to this scheme, so many possible opposites. And furthermore the alleged breaking loose of the repressed opposite does not harmonize with any current psychological scheme based on experimentation. While no one would be foolish enough to deny that there are often conflicting tendencies in life there is no justification for concluding there-from that every trait is repressing its opposite; conflict is not so omnipresent in life as that. The introverted specialist in the aorist tense, whom I used so generously some time back, was not constantly repressing extravertive drives. The wholly extraverted boy is not perpetually fighting introvertive tendencies for the simple reason that he has none. The person endowed with high intelligence is not perpetually repressing impulses to imbecility; no more is the imbecile repressing an urge to manifest a submerged high I. Q. The logically trained thinker is not perpetually repressing an almost incorrigible impulse to think in a merely perceptual or phantastic fashion, any more than the child who has reached but the imagination stages is repressing a drive to assert logical ways of thinking. If this seems unfair to Jung a careful reading will reveal that all of these examples may be found in his book with the exception of the opposition between high and low intelligence. The notion of conflict and repression and the breaking loose of repression or perhaps better the breaking down of the inhibitions is a very valuable one indeed and undoubtedly corresponds closely to certain clinical facts. The mistake lies in confusing it with a discussion of personality differences and in the attempt to classify abnormalities as in some fashion opposites of the normal.

A simple plan for the conception of the abnormal is available. In that paper of mine on extraversion-introversion (3.) I argued that the difference between the normal and the abnormal manifested itself in the lack of flexibility, the abnormal introvert for example was one who had normally much more extraversion but for some reason was unable to return automatically or voluntarily to his former condition. That which

I vaguely described as some reason may be a complex or many complexes, translatable doubtless, as Watson has so happily done, (12) into terms of conditioned reponses. Furthermore, as a rule the abnormally introverted individual suffers distortion of the content of his attention conditions and what might be called also a limitation of content. Here again one may if one wishes read the influence of complexes, but I am chiefly interested in the fact of the distortion and the cramping of the normal activity of those conditions which make for introversion-extraversion. This distorting and cramping, whatever be the cause, may also greatly affect that phase of the individual's behavior which has here been thought of in terms of the noetic dimension. Because of this distortion and cramping he may no longer think as logically as he once did, he may revert or regress to intuition or to imagination (phantasy thinking). The intelligence, so far as we can judge from the few studies of the intelligence of the psychotic, probably does not change very much (for a time at least) but capacity for using it and the material available to it is greatly altered. Wherever the psychopathic condition may be construed as being of a functional nature I believe we shall be able to achieve explanations in such terms as these. We shall not be obliged to think of the dimensions by which we classify personalities as involving opposites whose opposition results in abnormalities.

Much of this paper is of course highly speculative. The intelligence dimension is the only one of the four which has been largely attacked as a dimension and by experimental methods, and the experimentation there has been chiefly in the nature of attempts to determine the relative position of any given individual. On the other hand we do know much about attention and the effect of various attention conditions, although no one has sought to construct a scale and to measure degrees thereon as has been done with intelligence. Of the perception, imagination, intuition, logical reasoning dimension we of course know much more in terms of general psychology and somewhat more in terms of genetic psychology, but here again we have not sought to think of it as a dimension and to make a scale and to devise methods for determining relative positions on that scale. Work on moral judgments is also still in the pioneer stage although with some progress toward a scale. Two of the dimensions have been attacked from the point of view of qualitative analysis but not yet from

the point of view of quantitative measurement; while one has been much studied from the point of view of quantitative measurement and scarcely at all for qualitative knowledge. But this is merely pointing to lacunae in the experimental support for such a scheme. Satisfactory progress in the study and testing of personality awaits, it seems to me, the development of some fairly satisfactory scheme for personality classification, one that shall be sufficiently comprehensive and systematic to make possible the inclusion and the articulation of the various traits and peculiarities which attract attention and stimulate study. It is to facilitate progress of thought toward such a goal that the present offering is presented.

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A NOTE ON THE GRASPING REFLEX

Lovisa C. Wagoner

Additional evidence that the persistence of the grasping reflex is related to retarded development is furnished by the case of a microcephalic idiot boy. He was first seen when he was twelve months old at a child welfare conference to which he was brought by the mother who was worried because of a spastic condition of his limbs.

This spastic paralysis developed subsequent to convulsions which began the third day after birth and continued for five months, occurring as often as four times a day and again skipping a day. The duration varied from a few minutes to an hour. At twelve months the limbs were cold and sometimes blue and the stiffening of the limbs occurred frequently and was more pronounced than at the age of six months. When this stiffening occurs, the feet are crossed and both legs and arms grow rigid.

This child comes from a family which contributes largely to the social problem of the town in which he lives.

He is the youngest of six children. Four are doing fairly well in school and the fifth, who is three years old, is sturdy and well-developed. There is no history of miscarriages.

Before the birth of this youngest child the mother was worried because an older child had broken his arm, but reports her health as good. When this child was born, the mother was 38 and the father 37. Both are of American stock.

The birth was at term after two hours of labor. The baby weighed seven pounds. His head the mother describes as the "cutest little head, not much bigger than your fist."

At the age of twelve months the head was 98.3 mm. in circumference, 130 mm. in length, 100 mm. in height. The cubic capacity of the cranium (figured according to Lee's' formula, No. 14) was 717.56 cc. At seven months the fontanelles closed.

The palate is high arched and the ears, hands and mouth abnormally large.

At night he sleeps well, but has always cried a great deal during the day. As he seems more contented in his mother's arms than in any other position, his relatives insist that he

knows when she holds him. This, however, seems an easy way to avoid an unpleasant duty for the writer has seen him quietly resting in the arms of the oldest sister. The mother holds him most of the time and does her housework, such as it is, with the baby in her arms.

The baby, when last seen, was twenty months old. He has not been weaned, but has learned to take cream and soup. At twelve months he refused water, but would take orange juice. Unless hungry he refuses the breast, and according to the mother, grows angry when urged.

When the child first balanced his head the mother does not remember, but at twenty months he can do so for only a moment, then allows it to drop, a motion which the mother interprets as shyness.

Control of the eyes is lacking. At twelve months the pupils were dilated and the pupilary reflex was elicited only in bright sunlight; at seventeen months by a flash-light. Strabismus which appeared at six months has somewhat improved.

At twelve months there was usually no response to a dog-whistle blown close to his head, but occasionally the baby jumped and the pupils dilated. Once he appeared momentarily to fixate the eyes. In other trials the eyelids closed. This closing of the eyelids occurred whenever the head or face was gently touched and also during the grasping.

He shows the Babinski reflex in both feet, when the soles are stroked with the blunt end of a match and whenever the stiffening of the arms and legs occurs.

At twelve months he showed the grasping reflex, clinging so tightly to the examiner's fingers that he could be lifted from his mother's lap. He clung to a rod with both hands and supported his weight with his right hand, although the left was placed against the rod. At the next examination, a week later, he hung with the left for two seconds and refused to cling with the right, loosening his grasp as the hand was pulled as high as his head. On this occasion with both hands he supported himself for twenty seconds.

As it has been suggested that practice prolongs the persistence of this reflex, the child has been examined at rather infrequent intervals. It was thought that an attempt to see how long he would support himself at each examination might establish a conditioned response because of the fear he showed by a cry when he dropped even the slight distance to his mother's arms. Interesting as this might be, it would defeat

the purpose of the observation, that is, to see how long the grasping reflex would persist.

At thirteen months he supported his weight with his left hand while with his right he clutched the collar of the examiner's coat. He clung also with both hands. At fourteen months he grasped the rod with both hands. As the rod was raised he bent his knees—a thing he had never done before. He hung with both hands and refused to support his weight with either hand alone. Once when the rod touched the palm of his hands the fingers stiffened and bent backwards. This backward bending of the fingers has been observed in normal children about the time the grasping reflex disappears. He clutched the examiner's fingers tightly for a considerable period while he lay on his mother's lap.

The baby was visited at least once a month until he was twenty months of age. At twenty months the grasping reflex seems to have disappeared; the pupils are less dilated in ordinary illumination and react normally in bright sunlight; the Babinski reflex, however, is still present.

It may be that the refusal to support his weight is due to weakness of muscles. He has grown tall, being normal in height, though much undernourished. The hands sometimes close around the rod or finger, clinging tightly, but loosening the grip with the pulling of the body weight. At other times even the cutaneous reflex is absent.

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ON THE REFORM OF THE ITALIAN UNIVERSITIES

G. Sergi

1. Historical Status of Italian Universities

The universities were all State controlled except those so-called free universities, as Peruzia's, Camerino's and Ferrara's that were independent of the state and supported with their own funds. The State treated differently the universities under its dependence. They were distinctly in two categories, minor and major universities. To the first category belong the universities of Messina, Catania in Sicily, Sarsari in Sardinia, and Siena, Parma, Modena, and Macerata; but the salaries of the professors, not the appropriations to the laboratories and to clinical medicine and surgery, were uniform ones. The State (the Minister of Public Instruction) appointed in his own bill the funds for each university; but some of these received supplements from the Commons or Provinces, where the universities had their residence.

The little universities were not all complete in the four old faculties; some had only two or three of these faculties. But in spite of the penury of the scientific laboratories these universities were working with effectiveness because they were not crowded by a great number of students. The greater universities did not enjoy the same treatment by the State; the funds for the laboratories were different ones in the different universities.

The universities did not govern themselves but had the freedom to elect the President of the Faculties and the Rector, the greatest authority of the University. Each university had an academic body with a Faculty which deliberated on the discipline and didactic order in the university.

The students were obliged to follow the courses prescribed according to law and to take the examinations which were both annual and special for each course, and after the completion of courses they were obliged to take the examinations for the doctorship (lawrea) with an elaborate and written thesis and also with other oral examinations. The lawrea was admitted to the professional service, except for the advocate profession

and the profession of attorney; for these there was required another examination, not in the university, but in the tribunal.

Besides there are in Italy other higher schools, one with the name of Academy (*Academia Scientifico-Lettararia*) at Milan, and another an Institute of High Studies of Perfection (*Supiorement*) at Florence, both especially for studies in literature and philosophy.

United to the universities were the schools of pharmacy, and to some of the greater universities the schools of engineering. Three high schools of agriculture, separate from the universities, have their residence at Milan, Poruzia and Portici near Naples. All such schools are State schools. At Milan the commercial university of Bocconi is a foundation of Signor Bocconi.

Often it is said that in Italy there were too many universities, but our universities, the smaller and the greater, have had a great historic mission. They have been as the *Vestales*, who maintained burning the *secrum ignem* of the Italian sentiment—the sentiment of Italionita, during the many centuries when foreigners of various nations ruled over Italy and held in slavery the Italians. They were the watch-towers of Italian culture and of patriotism in every community when these communities were separated, and enlightened the elect who in the last century with boldness and with martyrdom in many instances, began that movement which has developed into their reformation. From these universities sprang also the student soldiers who expelled forever the many despotisms and the great foreign foes out of Italy.

2. The Reform

With the reform there will be only ten State universities: Rome, Naples, Bologna, Pisa, Geneva, Pavia, Venice, Padua, Palermo and Cagiari. They will be supported by the State, while other universities, the minors, will receive only some help from the State which must be supplemented with funds from the public administrations (common provinces) or from individual donors. This conditions brings into danger the existence of some universities, which are not State universities nor free ones altogether.

The ten State universities have united with the high schools of engineering and the schools of pharmacy; the last schools existing in every university, the first only at Rome, Bologna,

Padua, Torino, Milan, Naples and Palermo. Bologna has also a school of industrial chemistry while Genoa has a school of naval engineering. The Academy of Milan and the Superior Institute of Florence have been abolished, and they will assume, as other minor universities have, the name of university,—but not State university.

The ten State universities must comprise, in addition to the schools of engineering and pharmacy, the four old faculties: Laws, Literature and Philosophy, Medicine and Surgery, and Mathematical, Physical and Natural Sciences. The non-State universities must depend for their existence on the agreement of the State with the public judicial entities.

The universities and the high institutions have judicial personality and autonomy of government in didactic and disciplinary matters and in the administration of their goods under the tutelage of the State, which is represented by the Minister of Public Instruction.

The government of the university belongs to the Rector, to the Academical Senate, to the Council of Administration, and to the President of the Faculties and Schools. The Rector and the Director of a school are appointed by the King from among the professors, while the President is appointed by the Minister. Both serve for a term of three years.

The Senate is composed of the Rector in charge, the previous Rector, the President of the four Faculties, and the directors of the various schools which constitute the university. In the Council of Administration must be two representatives of the government, appointed by the Minister of Public Instruction and also the representatives of the agencies which have contributed to the funds of the university.

The universities bestow degrees which are considered merely as academical titles and are prerequisite for the State examination required for admission to professional service.

Such are the fundamental outlines of the Reform that is to be adopted definitely in October, 1924.

The new law does not yet establish funds for the expenses of the State universities but only funds for the subsidies to other universities, although it has fixed the number of chairs for each university and Faculty. Such fixation of the number of chairs may cause an arrest in the progress of the sciences and arts. The universities having limited funds cannot increase and progress.

The apparent innovations in this reform are: 1st, the autonomy of the universities; 2nd, the examination by the State for professional service.

But the universities lose their privilege to elect the Rector and the President of the Faculties. Also, it seems that this is a more formal than a substantial reform, but a true judgment can be rendered only after the experiment.

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G. STANLEY HALL

THE OHIO LITERACY TEST

Violet H. Foster and Henry H. Goddard

Origin and History

The Ohio Literacy Test is a modification of the Devens Literacy Test which was developed at Camp Devens, Mass., during the World War. It was one of several attempts to devise a test that would enable the army psychologists to quickly and easily divide the men into those who could be given the Alpha Test and those who were so illiterate that they must be given the Beta. The history and results of several try-outs of the tests will be found in the National Academy of Sciences Memoirs, Volume 15, 1921, pp. 349-355, while the four different forms of the test will be found on pages 281-285 of the same volume. It proved to be a good test from the start, showing high reliability, little effect of repetition, and being easily given and easily scored. It showed a correlation of .80 with the Alpha test. This indicated that it was too much a test of intelligence to be valuable for the purpose for which it was intended. On this account and because of the added clerical work in giving it in the army, though this was slight, the test was discarded by the army examiners as not adapted to their particular problem. They, however, give the test their approval in the following words. On page 353 are the words cited.

> "From its construction, from its relatively high correlation with school grades, from the fact that even with the lower grade of intelligence of second graders, a few failed to grasp the construction, the test gives evidence that it genuinely tests literacy (or reading ability) in the sense both of understanding simple sentences and visual vocabulary. If it should be made longer and be modified so as to differentiate better in the upper grammar grades, it might be well adapted to survev work with school systems. Even in its present form it is probably a fair substitute for the vocabulary test of the individual scale and it possesses the advantages of applicability to groups."

In the course of its first standardization it had been given to all high grade defectives in the Mass. School for Feebleminded at Waverley by Dr. Florence Mateer. Inspection of those results together with the preliminary norms, based upon

work done at Somerville and at Cornell, confirmed a previous conclusion that the Literacy was primarily a test of intelligence. Permission was secured by Dr. Mateer to use this test at the Ohio Bureau of Juvenile Research. A standardization was made by her and the test has now been in use for six years.

It was first employed in its original form of forty-two sentences but experience proved what had also been found at Camp Devens that the latter part became difficult too rapidly. To remedy this modifications and additions were made. The changes made in several of the questions were based upon the use of two hundred and fifty examinations (third to eighth grade). The additions were made from test vocabularies, the Stanford being used in some instances. Doubtful scoring on two tests was eliminated after five hundred trials by slightly changing the word form. All norms now in use are based on this revision.

The Test Form

The perfected test together with instructions follows.

(Test sheet as used at Ohio State Univ.)

(front page)

Department of Psychology
THE OHIO STATE UNIVERSITY

(Right) R—
(Wrong) W—
Score—
(Examiner) Ex.—
Gr.— M.A.—

NAME ..... (Grades Retarded) Gr. Ret.— M.A. Ret.—
AGE .....
DATE OF BIRTH .....
SCHOOL GRADE COMPLETED—....IN—..
SCHOOL .....
CITY .....
DATE .....

Do cats bark?.....NO . YES
Is coal black?.....NO . YES

(second page)

Can you see?.....No . Yes
Do men eat stones?.....No . Yes
Do boys like to play?.....No . Yes
Can a bed run?.....No . Yes
Have books hands?.....No . Yes
Is ice hot?.....No . Yes
Do winds blow?.....No . Yes
Have all girls the same name?.....No . Yes
Is warm clothing good for winter?..No . Yes
Is this page of paper white?.....No . Yes
Is every young woman a teacher?...No . Yes
Is it always perfect weather?.....No . Yes
Is the heart within the body?.....No . Yes
Are railroad tickets free?.....No . Yes
Are summer days ordinarily cold?..No . Yes
Do clerks enjoy a vacation?.....No . Yes
Is the President a public official?.....No . Yes
Would you enjoy the loss of a fortune?..No . Yes
Does an auto sometimes need repair?....No . Yes
Is it important to remember commands?..No . Yes
Are avenues usually paved with oxygen?..No . Yes
Do we desire serious trouble?.....No . Yes
Are muzzles usually noticeable?.....No . Yes
Is practical judgment valuable?.....No . Yes
Ought a man's career to be ruined by accidents?..No . Yes
Do you cordially recommend forgery?.....No . Yes
Does an emergency require immediate decision?..No . Yes
Are gradual improvements worth while?.....No . Yes
Should honesty involve personal misfortune?....No . Yes
Is a punctual person continually tardy?.....No . Yes

(third page)

Are all human beings mortal?.....No . Yes
Does a sportive person necessarily have "nerve?"..No . Yes
Are instantaneous effects invariably rapid?.....No . Yes
Should preliminary disappointment discourage you?.....No . Yes
Is hearsay testimony trustworthy evidence?.....No . Yes

Are the best authorities characterized by wisdom? ..... No . Yes
Is extreme athletic exercise surely necessary?.... No . Yes
Is incessant discussion usually boresome?..... No . Yes
Are algebraic symbols ever found in formulae?.. No . Yes
Are tentative regulations often estimable?..... No . Yes
Are "diminutive" and "Lilliputian" absolutely identical? ..... No . Yes
Is an infinitestimal titanic bulk possible?..... No . Yes
Do all connubial unions eventuate felicitously?.... No . Yes
Is a gelatinous exultation ridiculous?..... No . Yes
Are "perambulate" and "meander" similar in meaning? ..... No . Yes
Is avarice sometimes exhibited by cameos?..... No . Yes
Are steep ascents usually coexistent with sharp declivities? ..... No . Yes
Are the laity apt to indulge in radical theosophies? No . Yes
Is it necessary to know dialect forms in order to speak patois? ..... No . Yes
Does a carniverous quadruped devour fronds indiscriminately? ..... No . Yes

Note: In the test blank each of these pages is leaded to a page 8 x 11.

Directions for Giving the Test

as a group test

Call the children to order and instruct them as follows: "This is a test to see how well you can read. We are going to pass out some papers. Do not open them or turn them over until you are told to do so." Pass out the blanks, with the back page uppermost, and do not permit the children to open the blanks or turn them over. Then proceed as follows: "Now turn over your papers to the first page where it says NAME (assisting them if necessary). On the line where it says NAME write your name, first name first and then your last name (giving sufficient time and such help as may be necessary). On the next line where it says AGE write how old you were at your last birthday. On the next line,

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NOTE—These directions are not a part of the test itself and the examiner may help the children as much as may be necessary.

where it says DATE OF BIRTH put down when you were born, the month, the day of the month, and the year when you were born. On the next line where it says SCHOOL GRADE COMPLETED, put down the grade that you were in before you came to this grade, or the grade from which you were last promoted. Then after IN put down the grade you are now in. On the next line where it says SCHOOL write the name of this school, (naming it). On the next line where it says CITY write the name of this city, (naming it). On the next line where it says DATE put down the date for today, the month, the day of the month, and the year, (stating the date). After the date, and on the same line, I want you to write my name (giving the name of the examiner, writing it on the board if necessary)."

"Now below where you have been writing are two sentences. Let us all read the first sentence. DO CATS BARK? What is the answer to this question? The answer is NO, so everybody draw a line under the word NO (pausing for this to be done). Now let us read the next sentence. IS COAL BLACK? What is the answer to this question? The answer is YES, so draw a line under the word YES. Pencils down. On the next page you will find some other questions like the two which you have just answered. Read each question, think whether the answer is yes or no and then draw a line under the correct answer. Begin with the first question and work right down the page. After you have finished the first page, go on to the second. The questions start in easy and get harder as you go down the page. Some of them you will find very hard. If you do not know the answer, *do not guess but skip that question.* When I say 'Go' open your paper, begin at the top of the page and do as many as you can until I say 'Stop.' Work fast but do not make any mistakes. Ready Go!"

Allow exactly five (5) minutes.

The examiner circulates among the subjects to make sure that everybody turns to the proper page and begins with the first question and continues on the second page.

AS AN INDIVIDUAL TEST

The examiner proceeds as above, except that he may fill in the preliminary information for the subject to save time, omitting if desirable, such information as may already have

been obtained in taking the case history, then proceed as follows: "Read this sentence out loud (pointing to DO CATS BARK?). Is the answer yes or no? The answer is no, so draw a line under no (indicating). Now read the next sentence (IS COAL BLACK?). Is the answer yes or no? The answer is yes, so draw a line under yes.

"On the next page you will find some other questions like the two which you have just answered. Read each question, think whether the answer is yes or no and then draw a line under the corect answer. Begin with first question and work right down the page. After you have finished the first page, go on to the second. The questions start in easy and get harder as you go down the page. Some of them you will find very hard. If you do not know the answer, do not guess but skip that question. When I say 'Go' open your paper, begin at the top of the page and do as many as you can until I say 'stop.' Work fast but do not make any mistakes. Ready Go!"

Allow exactly five (5) minutes.

SCORING

Count the number of questions answered right and the number answered wrong. Subtract the wrong from the right—the result is the final score. No account is taken of omissions. We use a stencil, made from a narrow strip of celluloid marked with black ink to indicate correct underscoring. With the aid of this, the entire sheet is scored in a few seconds.

STANDARDIZATION

The first norms obtained by Dr. Mateer showing the correspondence between Literary score and school grade were compiled from the test results of 2,147 children. The second standardization on 4,845 unselected cases differs imperceptibly from the first. The earlier mental age norms include 876 children ranging in age from six through thirteen. Neither group included the chance children examined in the clinic, special surveys of abnormal suspects or any other selected cases.

The final standardization is based on 16,584 records, taken from the general files of the Ohio Bureau of Juvenile Research. They include the results of public school surveys, made in Columbus, in small cities of five to forty thousand

inhabitants and in rural districts of the state, as well as clinic and committed cases. From the more detailed study made on the latter we have obtained Stanford-Binet ratings, through the aid of which our mental age norms have been compiled.

The total group of 16,584 cases were first divided into their respective school grades, the scores being arranged in ascending value within the grade. The median score which falls on the fiftieth percentile represents the norm for a given grade.

Table I shows the percentile distribution of scores for grades I to XII.

As stated, Camp Devens found a fairly high correlation with Alpha showing that it is a test of intelligence as well as of Literacy.

Since it would often prove convenient to have a test of intelligence that could be so easily given it seemed worth while to determine the mental age norms. Of the 16,584 cases, we had Stanford ratings on 2,308 children. These we grouped by mental age, and the median of each age was taken as the norm of achievement at that age. These norms also will be found in Table I.

Table I.

NORMS FOR THE OHIO LITERACY TEST

Per-centile	Grade 1	2	3	4	5	6	7	8	1st High	2nd High	3rd High	4th High
100	32	39	38	34	40	40	43	50	46	47	47	48
90	15	16	21	24	28	30	33	35	38	40	40	43
70	6	11	16	21	24	26	29	32	34	36	37	38
60	4	9	15	19	22	25	28	30	33	35	35	37
50	**3**	**7**	**13**	**18**	**21**	**24**	**26**	**29**	31	34	34	36
40	1	6	12	17	20	23	25	28	30	32	32	35
30	0	4	10	15	19	21	24	26	28	30	31	33
20	0	2	8	13	17	20	22	25	26	29	29	31
10	0	0	4	10	15	17	19	22	23	26	25	28
0	-31	-	-11	-12	-21	-19	1	-28	00	3	16	16
Total No. Cases	299	2228	2248	2237	2480	2263	1285	1418	944	575	373	234

NORMS FOR SCHOOL GRADE

Grade	1	2	3	4	5	6	7	8	9	10	11	12
Score	3	7	13	18	21	24	26	29	31	34	34	36

NORMS FOR MENTAL AGE

Mental Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Score	0	2	7	14	20	22	24	27	29	30	33	34	36	39

METHOD OF USING TABLE I.

Look through the columns of figures in the grades until you find the number indicated by the score which the child received, or the nearest number to it. The figure in the per centile column of the same line as the score, when found, indicates the percentage of children of the grade in which the score is found who are below that child in ability. For example: suppose the score is seven, this would be between six and ten in grade one; that is, between the seventy percentile and eighty showing that this child ranks a little above the seventy percentile or in other words that seventy per cent of grade one are inferior to him in ability. Seven is also found in the middle of the column of grade two opposite fifty which shows that this child is as good as fifty per cent of grade two, that he is about average for that grade. But seven is also between four and eight of grade three. Eight is opposite the twenty percentile, showing that the child is almost as good as twenty per cent of grade three. Since the average is usually the better measure one would say that a child who has scaled seven on this literacy test is a second grade pupil.

To take an example in the higher ages, suppose a child scores thirty-one, it will be seen that this is the fifty percentile for the first year in high school; it is thirty percentile for the third year and twenty percentile for the fourth year. On the other hand it is eighty per cent for the first year, half-way between sixty and seventy of the eighth grade and above ninety percentile of six. Here again the first year high is the average.

To obtain a mental age the norms for mental age are read as follows: A score of 7 means a mental age of 7; a score of 14, a mental age of 8; 20, a mental age of 9, and so on to mental age 18.

Any score between the figures given in the table would be proportional between the two ages. For example: A score of seventeen would be about eight and a half; twenty-five about eleven years and four months.

RESULTS

An experience of six years in the use of this test at the Bureau of Juvenile Research and at Ohio State University has shown it to be particularly valuable in extensive survey work

where ease of scoring and time are important factors. The test, including all preliminary arrangements, requires not more than ten minutes and can be given to a group of thirty to forty children—and more with assistance of a proctor. It may be given as a language exercise without arousing any of the excitement that is supposed to accompany a mental test. Doubtful cases with very low scores may be selected from the group for a more careful individual examination.

For the survey of any entire building, or an entire school system, the method of procedure is as follows:

The test is given in each room, requiring as stated, about ten minutes. When it has been scored, and the results tabulated, the Mental Age and the school grade are recorded. These results are compared with the child's Chronological Age, the school grade that he is actually in, and with the teacher's impression. On the basis of this comparison, three groups will be found.

First group comprises those whose ratings on the test, the Mental Age, Chronological Age, school grade, and teacher's impression, are in such practical agreement that these children may be called the "normal" group, and no further examination is necessary.

A second group will be found in which the tests agree with the teacher's experience with the child, and show that he is either so much below his grade and his age, or so much above them as to be either distinctly feeble-minded, or definitely super-normally bright. The results here may be considered satisfactory, and no further examination necessary.

There will be a third group in which the results of the test do not agree with the teacher's experience. As for example: when a child gets a very low grade on the test, but is doing good work in the grade which is **normal for his age**; or on the other hand, he may get an exceptionally high grade on the test, whereas everything indicates that he is only an average pupil. Or, again he may get a grade which marks him as average, whereas the teacher's experience that he is perhaps dull, or exceptionally bright. In **all these cases**, a question must arise as to the validity of the test in this instance, and the only solution of the problem, is a thorough individual examination with the Binet Scale or some other equally reliable measure.

This last group will be a small one to whom individual examinations can be readily given. It does seem that the test is of great value in selecting from any group of children, those that especially need a thorough individual examination. It can not, of course, be used in the first grade, at least not until toward the end of the year, when the children have learned to read somewhat. Even then it must be used with discretion.

We have surveyed in this way a number of entire school systems, and in at least one case, the schools have been completely reorganized on the basis of the results of this test, to

the great benefit of the work, as testified by Superintendent and teachers.

Another group where the results of the test must be used with discretion and judgment, is the foreign-born child, or the child who has had little English except in school. In these cases, it is a more or less reliable index of the school grade that the child is able to work in, since it shows his command of language, but it may be of no value as indicating his Mental Age, since in such cases the mental capacity may be far beyond the acquired capability of language.

It will be noticed from a study of the percentiles in the high school years, that the differentiation in percentiles is not as great as in the lower grades. Indeed, the second and third year high, have, in most cases, the same score. It should be pointed out that this is not necessarily the fault of the scale. Indeed, there are many things in actual practice to indicate that it does not require any more intelligence or language ability to do third-year high school work, than to do second-year work. There are, of course, many factors entering into the problem at this point; but so far as this test goes, it would seem to indicate that a child who can do second-year High work ought to do third-year work equally well. But to do fourth-year work requires a somewhat better mind.

Again, it should be pointed out, that it is rather doubtful if the Mental Age norms for the higher years are indicative of anything more than a certain linguistic ability. For example, a score of 39 on this test, indicates a Mental Age of 18. A Mental Age of 18 is, on the other hand, very rare. According to the Army Tests only four and one-half per cent attain to this level, whereas, a score of 39 on this Literacy Test is fairly easy of attainment. It would seem likely, therefore, that at this end of the scale, we are measuring verbal ability rather than all-round mental capacity. Possibly this discrepancy in the scale may be due to too few cases. As it will be seen the number of cases in the third and fourth-year High is relatively small.

It may be desirable to point out, for the benefit of those who are not familiar with percentile scales, that the 0 percentile and the 100 percentile are of less significance than the others, because they of necessity contain the freaks. Since the 0 percentile is the grade of the very poorest child in the group, and the 100 percentile the grade of the best individual; either of which may be abnormal. The one abnormally dull,

and the other abnormally bright. The negative scores for example show that in every elementary grade group (except VII) there was one pupil who had many more wrong than right,—perhaps a smart Alec; perhaps a psychopath who got confused and marked NO when he meant YES.

Although this test correlates high with intelligence the correlation is not perfect. It is not solely an intelligence test. In individual cases it often deviates widely from the Binet or other mental measure. In these cases it is usually seen to be a clear case of *language*,—either exceptionally good or very poor. Table II will illustrate this as well as show a typical score sheet from a second grade class.

TABLE II.

No.	Chron. Age Yrs.	Mos.	Morgan Grade	Literacy Grade	Morgan M. A.	Literacy M. A.
1	7	10	4.4	4.5	9.5	10
2	7		3.2	2.3	8.2	8
3	8	4	3.7	4	8.5	10
4	7	11	3.2	3	7.8	9
5	7	11	3.4	3.4	8.2	9
6	7		3.2	2.3	7.8	8
7	7	11	3.2	2.3	7.8	8
8	7	8	3.9	3	8.8	9
9	8	1	3.2	3.4	7.8	9
10	7	10	3.3	6.5	8.2	13
11	7	10	5.5	3.4	10.7	9
12	8		3.2	4	7.8	10
13	8	0	3.2	3	7.8	9
14	7	11	4.4	5	9.5	10
15	7	10	3.7	3	8.5	9
16	8	1	3.2	3.4	7.8	9
17	8	1	3.2	3.4	7.8	9
18	8	1	3.2	4.3	7.8	9
19	7	6	3.2	3.4	7.8	8
20	7	10	3.2	3.4	7.8	9
21	7		3.7	3.4	8.5	9
22	8	1	3.9	3.4	8.8	9
23	7	11	3.9	3.4	8.8	9
24	7	5	3.2	2.3	7.8	8
25	8	0	3.4	3	8.2	9
26	7	5	3.4	3.4	8.2	9
27	7	10	3.2	2.3	7.8	8
28	8		3.2	3	7.8	9
29	7	5	3.7	3.4	8.5	9
30	8	11	3.7	4.5	8.5	10
31	7		3.2	4	7.8	10
32	7	11	3.7	3.4	8.5	9
33	8	2	3.4	4.5	8.2	10

TABLE III.

LIFE AGE NORMS FOR OHIO LITERACY TEST

	0	0	0	0	0	0	0	0	0	0	0	3	0
	5	0	0	0	0	3	5	7	9	13	15	18	12
	10	0	0	1	3	7	9	13	14	18	19	21	18
	20	0	2	4	7	10	15	18	19	20	22	25	23
	25	0	3	5	9	12	16	19	20	22	24	26	24
	30	0	4	6	10	15	18	20	21	23	25	27	26
	40	1	6	8	12	18	19	21	23	24	27	29	28
	50	3	7	11	14	19	21	23	24	26	28	31	30
	60	5	9	13	17	21	22	25	26	28	30	32	32
	70	6	11	14	19	22	24	26	28	30	32	34	34
	75	7	12	15	20	23	25	27	29	31	33	35	35
	80	8	13	16	21	24	26	28	30	32	34	36	36
	90	13	15	19	23	27	28	31	33	35	37	39	39
	95	15	18	22	26	29	31	33	35	37	39	41	42
	100	20	36	31	34	40	38	46	42	45	46	47	48
Cases		65		1448		1516		1491		1328		722	
			872		1405		1516		1346		1060		799

Table II gives the achievement on the Literacy Test and the Morgan Mental Measure of 2-A and 2-B class at near the end of the school year. The class was thought to be exceptionally bright. It will be seen, however, that on the Morgan only three go above third grade,—for which the class was practically ready. But they all show a slightly higher mental age by the Literacy than according to Morgan. This is easily explained when one has been in the room a while, the teacher is most excellent in the use of language.

Where the Ohio Literacy Test is used along with other tests in the detailed study of individual cases, the number and type of errors have considerable significance. If a subject's errors exceed the number right, or if he has checked many carelessly and at random, he has a very different type of mind from the deliberate or even swift worker, who makes few mistakes. Coupled with other evidence, excessive error of this kind suggests a strong basis for a diagnosis of instability of function.

For the benefit of those who may be interested, we append the norms for the chronological or life age, based on a part of the same data as Table I.

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AN EXPERIMENTAL STUDY IN PATTERNS OF THOUGHT*

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Education seems to consist of learning patterns and in applying them. In formal education the greatest amount of time is manifestly spent in mere learning of patterns regardless of their application. Consequently we hear on every side that those we have taught "cannot apply what they have learned."

Now let us examine that type of thinking which we call reasoning or problem solving, in the light of formal patterns. Perhaps you recall the old mental arithmetic which had at the beginning of each chapter a sample problem or two with a detailed solution. By thorough mastery of this pattern-solution and by substituting its parts for similar parts in the problems of the chapter, you found all of those problems rather easy of solution. If one or two troubled you, a few words from the teacher to help you make the necessary substitutions were all you needed. At the end of the book was a long miscellaneous list of problems whose easy mastery called only for labelling them by the type which each represented. Having as a child been vigorously exercised on such a text I, to this day, upon meeting some problems supposed by modern pupils to be "stunners," often can quickly call to mind the appropriate type. I recognize, for instance, the hare-and-hound, or weight-of-fish, or partnership, or proportion-type. Instead of such a label, a whole problem may flash before me with its solution. I seem to see all at once an example like this:

"Dominick has twice as much money as Abdul, and Abdul has four times as much as Dick; all together have $39. How much has each?" or "Three men can dig a ditch in five days and four boys can dig it in twelve days. How long will it take the three men and five boys working together to dig the ditch?" Just as readily the whole solution-pattern becomes available. Once, then, the pattern is recognized the solution

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is easy, provided all the details of the pattern and its application have been retained.

But do we not do a great deal of thinking, of problem solving, without being aware that we are using a familiar type? What commonly is called intuition seems to be just that. Perhaps the majority of new situations which daily confront us we respond to on the instant, too quickly for reflection. We say "yes" or "no" only to surprise ourselves later at the sagacity of our judgment. What usually happens is that we respond to certain dominant elements in the situation almost or wholly automatically (conditioned reflex). Our nervous system responds for us.

In order to get a type of thought-patterns I have submitted some simple algebra examples to elementary school children, from the second to the sixth grades inclusive, to discover whether such persons with no previous training in algebra are able, from manipulation of a few patterns which are set before them, to work similar problems in algebra. I have tried to discover, moreover, what such pupils, who can work certain problems with the pattern before them, can do when the problem appears in a miscellaneous group of problems or when they have not seen the pattern for a month.

Here are the exercises which were presented with no other instructions or explanations than those appearing at the top of the page, which were read to the pupils. There was no time limit for the test.

Name ---------- Grade ----------

Look at these examples. Try to see how they are done. Then finish the examples below the line. Ask no questions. Just do the best you can.

4 times a=4a
y times 3=3y
8 times m=8m
7 times r=7r

6ab times 4=24ab
5 times 3xy=15xy
3m times 2n=6mn
8c times 4d=32cd

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c times 5=
6 times n=
d times 6=
9 times r=

7 times bd=
9n times 6z=
21 times 2r=
4 times 7fg=

$(a-b)\ (a+b)=a^2-b^2$
$(x+y)\ (x-y)=x^2-y^2$
$(m+n)\ (m-n)=m^2-n^2$

$(c+d)\ (c-d)=$
$(f-g)\ (f+g)=$
$(r+s)\ (r-s)=$

The foregoing page of exercises was given to the 6th, 5th and 4th grades. This same page with the following miscellaneous exercises attached to the end, was given 3B and 2A children.

b times 6=
8 times xy=
(k—m) (k—m)=
rs times 8t=
4ab times 5cd=
9 times 2xyz=
(a—r) (a—r)=
k times 3pq=
(c+d) (c—d)=
ab times mnp=

From table I we see the success of each grade for each of the 11 algebraic exercises when these exercises appeared below the patterns.

It seems rather surprising that these children upon this first experience with algebraic symbols, have done so well the tasks set before them. Be it remembered that they had no aid except the samples. The total percentage of correct performance was as we see, 96 for the 6A's, 98 for the 5A's, 72 for the 4A's, 29 for the 3B's, and 14 for the 2A's. As might be expected the 2A's fail wholly and the 3B's pretty generally, on the harder exercises involving multiplication of numbers which they had not yet mastered.

The 6A and 5A groups were, a month later, given the same exercises without the patterns. Table II shows the amount

NUMBER CORRECT (WITH MODELS)

Grades	6A	5A	4A	3B	2A
No. Cases	66	20	28	70	33
c×5	64	19	20	39	9
6×n	65	19	24	41	13
d×6	65	19	18	30	6
9×r	63	19	23	42	13
7×bd	65	20	22	35	9
9n×6z	62	20	18	9	0
21×2r	64	20	24	6	0
4×7fg	65	20	20	7	0
(c+d) (c—d)	61	20	19	4	0
(f—g) (f+g)	61	20	18	4	0
(r+s) (r—s)	61	20	17	4	0
Total %	96	98	72	29	14

NUMBER CORRECT

WITH MODELS vs WITHOUT MODELS

Grades	6A		5A	
No. Cases	66		20	
	With Models	Without Models	With Models	Without Models
c×5	64	33	19	15
6×n	65	52	19	12
d×6	65	32	19	11
9×r	63	51	19	13
7×bd	65	51	20	14
9n×6z	62	45	20	9
21×2r	64	43	20	11
4×7fg	65	43	20	11
(c+d) (c−d)	61	2	20	0
(f−g) (f+g)	61	2	20	0
(r+s) (r−s)	61	1	20	0
Total %	96	48	98	44

TYPES OF CONFUSION BY A SIXTH GRADE CLASS

$c^2+2cd+d^2$ $c^2-2cd+d^2$	(7 cases)
cd	(7 cases)
cd−dc	(4 cases)
c+cd+d c−cd+d	(3 cases)
c+cd+d c−cd+d	(3 cases)
(c−d) (c+d)	(2 cases)
c+d+cd c−d+cd	
$(c^2+2cd+d^2)$ $(c^2-2cd+d^2)$	
c^2+2cd c^2-cd	
$c+d^2$ $c-d^2$	
cd dc	
$c+d^2$	
cd^2	

of retention, the loss being about one-half. Mere inspection of these figures shows the greatest loss with the last three exercises.

It should be noted that on the second test there was introduced at the head of the page of exercises a new type of problem, as $(x+y)^2$. How much this new type was responsible for the poor performance on the last three exercises is a question. In table III, for example, are kinds of errors by the sixth grade group which seem to have been suggested by the samples of the $(a+b)^2$ type of exercises in the second test.

Here is what the 6A's and 5A's did on this new group of patterns:

	6A (66)	5A (20)
$(c+d)^2$	44	9
$(e-f)^2$	38	5
$(g+5r)^2$	10	3
$(s-4v)^2$	6	3
Total %	37	25

This is a good example of the evils of interference by one set of habits before another similar set has been well mastered—one big source of difficulty which continually confronts the average school child.

As will be seen in this group of samples, as well as in the first three groups submitted, there are several distinct patterns. For example, $(c+d)^2$ is not the same for the child as $(s-4v)^2$. As the results show, a good number of the children responded to several such distinct patterns. For example, whereas 44 sixth grade children solve $(c-d)^2$, only six solve $(s-4v)^2$. Although to us these two examples are of the same pattern they were not of the same pattern for these children; and it is doubtful if they are of the same for the average beginner in algebra. We also see, Table II, that whereas d times 6 and 9 times r seem of the same pattern to us, d times 6 is answered correctly after a month by thirty-two as against fifty-one for 9 times r. It was found, moreover, that, whereas 2 of the 66—6a children gave the form $c5$ and $d6$ to c times 5 and d times 6 in the first exercise, 26 did this after a month. This response to simple suggestion is well illustrated by the 2A's who on the first performance did as follows:

9n times 6z=9n6z	(10 cases)
21 times 2r=212r	(11 cases)
4 times 7fg=47fg	(11 cases)

It is very evident, then, that there was an almost universal tendency to make application of specific patterns, whether right or wrong, with no evidence of working out a general rule beyond the very immediate kind of problem; that, moreover, a dominant kind of error is in application of the wrong pattern.

A little more evidence of such wrong application is apparent when we study what 70—3B's and 33—2A's did. As will be seen, in this test, which is added to the exercises following each group of samples, there was on the page to be solved later, a group of miscellaneous exercises representing the several types

which were grouped above. We might expect *b* times 6 no harder than *d* times 6 and 8 times *xy* no harder than 7 times *bd*. Now *d* times 6 and 7 times *bd* followed their respective patterns, while *b* times 6 and 8 times *xy* appeared in the miscellaneous group. Here is what happened: Of the 70—3B children, 40 correctly solved *d* times 6 but only 27, *b* times 6; 35 solved 7 times *bd*, but only 23, 8 times *xy*. The corresponding figures for the 2A's were 6 against 1 and 9 against 4.

Learning such elementary algebra of the nature of this study,—perhaps all learning, indeed,—consists, among other things, in becoming familiar with patterns *per se*, in recognizing their applicability to more or less similar situations. and in making these patterns so much a part of us as to render then available for future applications. Before we can solve a problem we must have in our possession the necessary patterns. Before we can think we must have available the appropriate patterns of thought. On the other hand no matter how many patterns we have at our disposal they are of value only as they are used and *correctly* used.

Now by mastery of a large number of patterns which naturally fall within a group, we come by and by, to find ourselves only vaguely aware of any specific instance or pattern. Indeed, we may just respond without any awareness of what we did or why.

We lead the learner as we teach, not only to become familiar with a wide variety of specific patterns, but to see how these various patterns, on account of their preeminently common elements, fall into groups, and how one pattern of such a group can be used in substitution for other patterns of that group. Of course by the mere grouping of subject matter in its presentation we expose the learner at the same time and place, to those patterns which are most similar, in consequence of which procedure the use of any one pattern of a group of similar patterns make the more available any other one of that group. In other words, when we teach well we present things together which belong together and we lead learners to see that they *do* belong together and *why* they belong together.

Now one pattern of thought standing out more prominently than others which are very similar to it, may represent all others of the group, rendering any or all of them available for application when necessity demands. With added experi-

ence such a symbol for a group of similar patterns is learned or responded to as having some essential element in common with another symbol which in turn has come to stand for numerous similar specific patterns of another group and so on *ad infinitum.*

But, say all we will about abstraction and imageless thought, we have no proof that there are not vestiges at least of lingering specific patterns revived in all the thinking which we do.

It seems to the writer that one of the best ways to study the learning process involved in any school subject is to try some of its elements upon children to whom that subject is wholly new.

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THE QUESTION OF HIGHER EDUCATION FOR THE BLIND.**

CHARLES BEN MINNER.

As an introduction it may be well to point out what is here meant by the term "higher education." This precaution is not so imperative now as it was forty or fifty years ago, for the term has a more definite significance nowadays. The present system of education in the United States is distributed under four fairly distinct heads, namely, the kindergarten, the grades or the grammar school, the high school, and the college or university. It is only the instruction offered under this last head, in the college or university, which, in the United States, comes under the nomenclature of higher education. In foreign countries the term is not thus confined to the high type of instruction offered in the standard American colleges and universities. In England, for instance, it is applied to any education above the elementary schools, and the English elementary school corresponds closely to our grammar school—indeed, our grammar grade education is often spoken of as elementary. In England, therefore, higher education includes that which in America is called a high school education. But in the United States, and therefore in this paper, the term higher education signifies instruction above the regular high school course—college or university training. On the whole, this has always been the significance of the expression here in America, and yet, as there have been those who have included high school education under higher education, it is well that the point be definitely settled in so far as this paper is concerned, in order to avoid any possible confusion.

HISTORY OF THE MOVEMENT IN THE UNITED STATES FOR THE HIGHER EDUCATION OF THE BLIND.

For three-quarters of a century (which is almost as long as there has been offered to the blind in the United States any form of instruction whatsoever), those interested in the train-

**This paper was written as a part of the course on The Education of the Blind given under the direction of Harvard University by Edward E. Allen, Director of Perkins Institution.

ing and development of this handicapped part of human society have discussed and re-discussed the question of higher education for the blind. Definite and somewhat systematic education for the blind had been established in Europe some fifty years before its advent into America in the early 30's of the last century. From the very beginning of such education in this country its primary aim has been, and still is for that matter, to fit the blind person to take and fill successfully his place in society. The early interpretation placed upon this aim by the first schools for the blind was necessarily far different from the meaning now given it. Society had always looked upon the blind as incapable of doing much else than begging on the streets, and the idea of teaching the blind was at first generally received with doubt and misgiving. The first schools for the blind, therefore, began modestly as industrial schools primarily, training the hand rather than the mind. It is for this reason that the problem of higher education for the blind did not immediately become a pressing problem. Educators of the blind had to prove first of all that the blind could be taught to use their hands and take care of their bodies, before attempting to maintain that many of the blind possessed normal and even superior minds. But even so, this latter claim was not slow in forthcoming. It was seen very early indeed that the expression "his place in society" means, at least for a few blind persons, the holding of positions which require a high degree of education. And educators of the blind were not slow to place this new interpretation upon the aim in the education of the blind.

It was only twenty years after the opening of the first school for the blind in this country, until the bold voice of "The Father of American Education for the Blind", Dr. Samuel Gridley Howe, was heard calling loudly and earnestly for a general recognition of the intellectual capacity of the blind. In August of 1853 the first convention of American Instructors of the Blind was held in New York City. In his first address before this convention Dr. Howe spoke in the following confident terms concerning the intellectual capability of the blind: "By diligence and perseverance, as is known to you all, the blind may make rapid progress, and attain eminence in all branches of study, the illustrations of which do not require the aid of light and shade." (1).* This statement and other statements

*Figures in parentheses refer to notes to be found on page 387.

similar to it which may be gathered from the utterances of educators of the blind in this country during the period in question, indicate a growing conviction not simply that the blind can be educated, but even that they may receive the same kind, the same quality, and the same degree of education that any other human being may receive. This conviction is the very beginning of a movement which, though it has had a long, tedious, and vascillating existence, moving now in this direction, now in that, and withal, advancing at times so slowly as to be utterly discouraging, has, nevertheless, maintained a continuous existence, and has ever held its ultimate goal before it, namely, the provision for the higher education of the blind of the United States on at least equal terms with the sighted.

The first definite form which the movement for the higher education of the blind assumed was an ugly and disagreeable one, and being so, it should not be dwelt upon except to point out its possible influence on the later development of the movement as a whole. About the year 1860, Dempsey B. Sherrod, a blind man, began agitating for a national university and printing house for the blind. By making grand promises and presenting his proposition in the best possible light, he obtained the endorsement of a great number of influential gentlemen including some of the foremost educators of the blind in this country at the time. During some ten years Sherrod spent his time traveling up and down the country soliciting funds for his proposed university. He paid all of his expenses, including even his railroad fare, by simply presenting credentials signed by gentlemen who neither knew nor sanctioned the use to which their names were being put. During his campaign Sherrod collected large sums of money in the form of private donations and gifts from religious and charitable organizations, not a dollar of which did he ever spend on printing for the blind or aiding the blind to receive higher education in any way. About 1870 Sherrod framed a bill which proposed the establishment of this national university, and the bill was about to receive favorable consideration by Congress when it was stopped by Dr. Howe and others. Sherrod and his plans were strongly denounced by the second convention of American Instructors of the Blind in 1871 (2).

It is possible that a national college for the blind could have been established around 1870 had the proposition been presented and managed by a capable and honest person. The time seems

to have been ripe for such a step. In his 38th annual report of Perkins Institute, 1869, Dr. Howe declared himself strongly in favor of a college for the blind, and gave a description of what it should be like, with estimated costs. Nevertheless, a year later he promptly and vigorously opposed the bill introduced into Congress by Dempsey B. Sherrod because he knew that Sherrod's motives were entirely selfish and would not promote the best interests of the blind. But viewing the matter in the wisdom of the present day it is fortunate that a college for the blind was not established.

But even granting that one result of Sherrod's activity was for the best, in that it blocked the establishment of a national college, there were other results which were by no means beneficial to the cause of higher education for the blind. His fraud certainly slackened the liberality of the public toward the blind as a whole, and created in the public mind a lack of confidence in educators of the blind and their cause which was dispelled only with difficulty.

Along with their "Preamble and Resolutions" denouncing Sherrod and his plans, the second convention of American Instructors of the Blind resolved: "That this Convention regards the establishment of any college or university for the blind as unnecessary, and even prejudicial to their interests . . ." (3). This resolution represents the first concerted action relating to the matter of higher education for the blind ever taken in this country. Such action was nothing to boast of, but with it a beginning had been made at any rate. Scarcely anything more could have been expected under the circumstances. The schools for the blind were still young, and educators of the blind had problems a-plenty besides this one of higher education. It was the opinion of the Convention at the time of its second meeting in 1871 that each school, with the aid of private philanthropy and perhaps of the state, could and should take care of the higher education of those of their graduates who desired and merited assistance along this line. But educators of the blind soon found that the problem was a much larger one and a far more serious one than had at first been supposed.

The American Instructors of the Blind met again in 1872 at Perkins Institution, Boston, and associated themselves under the new name of American Association of Instructors of the Blind. At this meeting, as at the one the year before, little definite action was taken relative to securing higher education for the blind. The subject was recognized and urged as a

proper field of endeavor for workers for the blind, but the institutions of the country were busy each with its own problems of growth and expanding field of helpfulness. It is easy to understand why higher education for the blind was not considered a matter of vital concern at that time, when it is known that the education then offered in the schools for the blind was little more than primary education. The elementary nature of this instruction was due in part to the state of development of our educational system as a whole, but particularly to the fact that American education for the blind was, comparatively speaking, but a child. The element of wonder which attended the realization in this country that the blind could be educated at all had not yet worn away, and educators of the blind had not as yet been able to couple up with action the few scattered thoughts which had been entertained concerning the higher education of the blind. Indeed, it was not until 1880 that any further action was taken on the matter by the American Association of Instructors of the Blind. In that year the Association appointed a committee of three to "consider the subject of the collegiate education of the blind, and the propriety of establishing scholarships for the blind in one or more of our colleges or universities, and that this committee be requested to report at the next meeting of this Association in 1882." (4). This committee, however, did not report until 1886. But it was not wholly inactive during these six years of its existence. It promoted interest in the subject of higher education for the blind by individual discussion and correspondence, and finally met in Baltimore, along with several other prominent educators of the blind, where they thoroughly considered the subject in question. At this gathering, the opinion was unanimous in favor of a national college for the blind, and the committee petitioned Congress to incorporate such a college in the District of Columbia. At the time of the committee's report in 1886 no final action had been taken by Congress.

In the meantime, in December of 1885, an association under the name of American College for the Blind was informally organized in Baltimore. This body was not officially connected with the American Association of Instructors of the Blind, although its membership included the Superintendents of all of the schools for the blind in the country, as well as many other prominent persons interested in work for the blind. The purpose of this organization was to establish a college

for the blind supported by donations, subscriptions, legacies, and possible aid from the Government and the several states. But when this organization realized that the American Association of Instructors of the Blind meant definitely and earnestly to take up the matter of higher education for the blind, it dissolved as informally as it had organized, without having done much else than to manifest a wide-spread interest in the subject under consideration.

When the American Association of Instructors of the Blind met in 1886 the committee on higher education which had been appointed in 1880 was dissolved, and a larger committee, finally consisting of the Superintendents of all the schools for the blind in the country, was formed to take in hand the matter of higher education. Following the lead of the opinion expressed in the report of the first committee, the Association at this time was strongly in favor of a national college. And this committee of Superintendents worked with this object in view for somewhat more than a year. In the latter part of 1887 such of the committee as could do so met in Baltimore, and after considerable discussion finally concluded to give up the idea of a national college. They were brought to this decision by the following considerations: first, the difficulty of obtaining action from Congress; secondly, a considerable doubt as to the feasibility of the plan; thirdly, the inability to offer to all blind students equal opportunity to attend such a college. The plan for a national institution thus being abandoned, the committee began to work toward the establishment of scholarships for the blind in the regular colleges and universities of the country. Their first step in this direction was to frame a bill entitled "AN ACT to promote the higher education of the blind in the several states and territories," which was presented to Congress in 1888, and, in its final form, called for a fund yielding an annual income of $50,000 to be distributed equitably among the states and territories. The bill was placed in the hands of the congressional committee on education, but at the meeting of the American Association of Instructors of the Blind in 1888 it was reported that no action had been taken on it. It is probable that the bill was never reported out of the hands of the committee on education, for nothing further is ever heard of it.

The American Association of Instructors of the Blind again followed the opinion of its committee on higher education and declared itself in favor of scholarships at its meeting in 1888.

But since Congress did not seem disposed to aid in providing higher education for the blind, it was decided that each Superintendent should bring the matter before his own state legislature and obtain aid, public or private, in order that results might be produced which would bring Congress to see the expediency of enabling blind students to attend college. Certainly such individual efforts produced results, but they have not been sufficient to convince Congress that higher education for the blind is a matter which should be handled by the National Government.

The next official action which the Association took relative to the subject under consideration was in 1902, when a committee was appointed to investigate pending legislature concerning education for the blind. This committee found that a bill had been introduced into Congress by another association of workers for the blind, but did not favor the measure as it stood. In 1903 the bill was withdrawn upon the promise of the committee to draw up another which was to be presented to Congress the next year. In 1904, however, there was before Congress a measure calling for the free transportation through the mails of reading matter in raised characters used by the blind, and so it was not deemed wise to introduce a bill concerning higher education for the blind. The committee, however, had its bill ready, and it was presented to Congress in 1906. The measure provided that "all necessary expenses" of blind students attending college should be paid from the national treasury. Congress, of course, could not favor such a measure. Since 1906 there has been no official effort on the part of the American Association of Instructors of the Blind to obtain national aid in the matter of higher education for the blind.

But this association has not been the only one working along this line. In 1895 there was formed in Missouri the Missouri National College Association for the Blind. At first this was a purely local organization, its membership being composed mainly of graduates of the Missouri and Kansas schools for the blind. The Association declared its object to be the establishment of a national college, because it felt that the existing schools for the blind did not fit the majority of their graduates to occupy profitable places in society. Its aim thus being national it soon began to draw in members from all over the country, but finding that the general opinion of educators of the blind was against a national college, it changed its policy to advocate

scholarships, and its name to The American Blind People's Higher Education and General Improvement Society. This was in 1897. The Society took definite action to secure national aid in 1899 when it framed a bill calling for the appointment by the President of the United States of a commission on the education of the blind, and providing that the expense of blind students in college should be met to the same extent that they are in schools for the blind. This bill was introduced into Congress in 1900, but did not receive favorable consideration. It was slightly amended in 1901 to provide only for the higher education of the blind. This is the bill which was withdrawn in 1903 at the request of the American Association of Instructors of the Blind. In 1905 the American Blind People's Higher Education and General Improvement Society changed its name to the American Association of Workers for the Blind. This Association has maintained a standing committee on higher education for the blind, but except for discussion it has done very little else officially in this direction. For the past fifteen years it has been interested in other problems such as a uniform type for the blind, the industrial shop, etc.

This historical sketch has dealt particularly with the activities of the two organizations, the American Association of Instructors of the Blind, and the American Association of Workers for the Blind, because they are at present the two great organizations working in behalf of the blind. There have been, of course, from the very beginning, smaller organizations, and individuals, working to improve educational conditions among the blind. Various alumni associations of schools for the blind have established funds for aiding blind students in college, private individuals have bequeathed money for the same purpose, and smaller societies have been formed from time to time with such aid as their object. Advanced courses which would come under the head of higher education have been offered by a few of the schools for the blind to their graduates and to others wishing the opportunity for further study. In 1908 the Illinois School for the Blind offered a few advanced courses by correspondence, but the result proved unsatisfactory, and the plan was soon given up. There is at present in Winnetka, Illinois, a suburb of Chicago, a correspondence school which gives promise of becoming a factor in the higher education of the blind.

In concluding this historical sketch, it is to be observed that the movement in the United States for the higher education

of the blind points to the establishment of scholarships in regular colleges and universities instead of a national college for the blind, and it is generally agreed that universities instead of a national college for the blind, and it is generally agreed that these scholarships are state affairs rather than national affairs.

JUSTIFICATION OF HIGHER EDUCATION FOR THE BLIND

History alone can neither explain nor justify any movement or trend of thought. The law of survival of the fittest may operate in the realm of ideas, but there is much greater certainty that development will proceed in the right direction, when men prune and nurture their ideas as the great botanists tend their precious plants. In the case of ideas, thought itself is the pruning knife. And therefore, something more must be done than simply to indicate the working out in history of this movement for the higher education of the blind, if the idea is to rest on firm ground. It is necessary, then, to justify higher education for the blind in thought and theory. This may best be done by setting forth the points of its desirability, its possibility, its practicability, and its justice.

DESIRABILITY OF HIGHER EDUCATION FOR THE BLIND

If it were asked of a blind person of college age picked at random whether or not higher education is desirable from the point of view of the blind person, he would certainly answer emphatically in the affirmative. Indeed, its desirability does seem obvious, but the real question to be answered is: Why is higher education desirable, and what problems will arise if it is afforded?

From the point of view of the blind person, the strongest argument in favor of higher education is that the person without sight is at his best in the field of mental endeavor. In speaking on this point, E. E. Allen says, "The mind itself of the blind is the least trammeled by the lack of sight: hence some pursuit where intelligence is the chief factor would seem to be the best adapted to his condition" (5). And George S. Wilson reiterates the same idea over and over again in a paper entitled "The Educational Ideal in the Training of the Blind" (6). He says, "When they are prepared for mental occupation, they are scarcely at a disavantage; but where the dependence is upon handicraft, the results are far from satisfactory." And again, "The outlook is much brighter,

therefore, when the result depends upon professional ability rather than cunning and craft. In thinking, the blind person is scarcely at a disadvantage. The trained and educated blind man may accomplish much when the results depend upon purely mental efforts. If he can gain even by enormous toil a sound and well-trained body, a well-stored and educated mind, and a capacity and an inclination for right doing, he can reasonably hope to succeed." O. H. Burritt's opinion is expressed in these words: "There is no doubt that the capable blind man can make his way best in the field of mental endeavor" (7). J. J. Dow added the weight of his opinion in 1909 when he wrote, "Yet it is fully recognized that it is by the brain rather than by the hand that the blind are most sure to succeed, and to none does a successfully pursued college course promise more than to the blind" (8). After pointing out that of sixty male pupils who left the New York Institution from 1892 to 1912, two-thirds became competent and successful men in business or professional life, and noting the contrast between this result and results where there has been no schooling of the blind, E. M. Van Cleve says, "It is most important, therefore, that the child who loses his vision should have the best education possible for him" (9).

These quotations from prominent educators of the blind indicate a concurrence of general opinion with the argument above stated. But if the blind person is to receive professional rather than manual training he must be given more than a high school education. College training is becoming so general and so universally demanded in the professional world that the person with only a high school education has little claim to be counted among those who do the mental work of the world. And the blind person without higher education will find it doubly difficult to enter the field of mental endeavor.

Another powerful reason why higher education is desirable from the viewpoint of the blind person is derived from the fact that college training affords culture consisting of a broadened and intensified outlook on life and an independence of mind which the blind person could get only under the rarest circumstances outside of college. The young graduate of a school for the blind is apt to lack the proper sense of responsibility and self-respect, and if he goes out into the world with interests limited and education too narrow, he will not be able to make and hold for himself the place in life to which his real ability may entitle him. A higher education gives him the

proper orientation with regard to the world. If he has the world of thought to draw upon he need never be without "companions;" he is enabled to live within himself when it is necessary, and it is necessary much more often in the case of the blind than of the sighted person. No one doubts the desirability of the cultural benefits derived from a liberal education by the sighted, and it should be realized that the blind will receive from an education much greater benefits because of their greater needs. A blind person is naturally shut in in a thousand different ways where the mere possession of sight instructs the ordinary sighted person. Higher education for the blind would certainly obviate such a condition to some extent, and it is therefore in so far forth desirable.

Higher education is desirable because it is a powerful factor in giving to the blind person *entrée* into the normal social life of a community. This matter of real social intercourse in a group of sighted persons, presents certainly one of the greatest problems which the blind person must meet. The difficulty of the problem is due to two circumstances: the first is that society generally regards the blind person as absolutely helpless; the second is that there really does exist a very considerable lack of social competence among the blind just as there exists such a lack, but to a less degree, among sighted persons. The public gets its ideas concerning the blind from two sources, tradition and observation. If observation contradicts the ideas derived from tradition such ideas must change. It therefore becomes imperative that the blind be given the very highest degree of training in social efficiency. It is one aim of all modern education to socialize its recipients, but such an aim should be primary in the education of the blind. The value of a college education is recognized to be at least fifty per cent. social, and where a blind man receives such an education it cannot fail to broaden and deepen his contacts in society.

Higher education would tend to raise the general status of the blind as a whole. If college education were made easily accessible to the blind, the number taking advantage of the opportunity thus afforded would constantly increase, and therefore the educational level of the blind would gradually be raised. If the younger pupils in the schools for the blind could observe their seniors going through college and becoming successful men and women, they would be inspired with the ambition to do likewise. If such an ambition could be made general,

its uplifting effects on the moral, physical, and spiritual life of the blind as a whole would be very real and highly desirable.

From the point of view of the community at large, higher education for the blind is desirable first and foremost because of the fact that a considerable number of blind persons go out into positions of influence and responsibility which should be filled by persons highly trained and educated. As early as 1876 William Chapin produced statistics (10) which show that about sixteen per cent. of the graduates from Pennsylvania Institution for the Blind at Philadelphia had gone into positions which ordinarily demand the services of highly trained persons. Statistics (11) which were published in 1878, covering not simply one school, but all the schools for the blind then in the United States, in so far as data was obtainable, gave results which were very much the same as those found by Mr. Chapin. This sixteen per cent. represents superintendents, principals, teachers, lawyers and ministers. It may be that statistics would show a smaller percentage of blind persons engaged in these occupations today, but if so, it is due to the ever increasing requirements of such positions. A college education is one of these requirements, and since a certain number of blind persons will inevitably engage in this type of work, regardless of their lack of higher education, it is wise to afford them the opportunity to secure such professional training as will better fit them to occupy these positions.

Harry Best mentioned two points (12) which show the desirability of higher education for the blind from the point of view of the community. He points out in the first place that higher education put in easy reach of the blind would tend to raise the standards of the schools for the blind throughout the country, and to produce general uniformity in the work done by them. That these are desirable results is obvious enough. Many schools for the blind are doing work which would not be recognized as standard, and yet it is most important that such schools should maintain a high type of work, for the public must be made to realize that the only way in which education for the blind is necessarily different from education for the sighted is in methods, not in content. When such an ideal is made a reality, and the work done by the various schools for the blind over the country is made more nearly uniform, then the public will know what to expect from one who claims to be graduated from such an institution.

The other point which Harry Best mentions is that it is desirable to afford higher education in some form in order to complete the system of education for the blind in the United States. This country has a comprehensive and adequate system of education for the sighted, and Americans well may be proud of it, but there will be reason indeed to take pride in the educational system as a whole when it shall include provision for the complete education of the blind.

Higher education for the blind will have a psychological influence upon the community at large, which though it be obscure will be none the less potent. It is inspiring to see blind young men and women successfully completing college courses and fitting themselves for useful service in society. And the effect is doubly productive of happiness and high ideals when the community feels that it has done its part in making possible this higher education of the blind.

Higher education is desirable for blind persons for the same reasons which make it desirable for sighted persons. A very powerful argument for it in either case is that it makes of its recipients better citizens with bigger souls and higher ideals and aspirations. Higher education for the blind can not fail to lift the life of a community to a higher level, and in so far as it does so, it is certainly desirable.

POSSIBILITY OF HIGHER EDUCATION FOR THE BLIND

The possibility of the higher education of the blind is a matter which can not be dismissed with a simple "of course." That *a* blind person, or a *few* blind persons, might be able to obtain a college education would be universally granted, but the matter resolves to the question as to the capabilities of the blind in general.

Everyone knows, or should know, that history and literature are well populated with blind persons who have succeeded to remarkable degrees in many and various walks of life. There is no need to dwell upon this fact, nor upon the further circumstance that there are more highly educated and successful blind persons in the world today than there have been at any time before. And yet, such facts indicate that the higher education of a certain per cent. of the blind is possible.

A few years ago William B. Wait made an interesting and suggestive study in comparative education at the New York City School for the Blind (13). He found that a comparison of the Regents' examinations according to a wholly impartial

rating during a period of nine years showed a superiority of the blind pupils over the sighted pupils of other schools. Present-day psychological research would probably not sustain such results as a general condition, but there is little doubt that it would show the higher education of the blind to be a definite possibility.

O. H. Burritt maintains (14) that fifteen per cent. of the pupils in schools for the blind are superior to sighted pupils of the same age and length of time in school, and that from five to ten per cent. of the blind pupils now in school should be afforded facilities for higher education and professional training. Mr. Burritt is an enthusiast, and his figures are therefore perhaps too high. He should bear in mind what Dr. Howe has said: "There is no study, there is no calling, which the blind man can pursue with the same success that he would do if, with the same effort, he had the advantages of sight" (15). And yet, all educators of the blind feel that a considerable per cent. of the blind could and would take advantage of higher education if it were afforded on terms which they could meet.

The United States Census for 1920 shows that there were at that time somewhat more than five hundred blind persons in this country who possessed college educations. Some of these, of course, were old men and women who had got their educations years ago, some of them even before they lost their sight, but the fact shows, nevertheless, that the higher education of the blind is certainly a possibility.

No adequate psychological data have as yet been gathered to either prove or disprove the possibility of the higher education of the blind, but it is hoped that such data will not be long in forthcoming, since a few schools for the blind have already established departments of psychological research which are reported to be rendering a real service and to be of great promise.

PRACTICABILITY OF HIGHER EDUCATION FOR THE BLIND

One of the foremost problems which arise in connection with the practicability of providing higher education for the blind relates to the number who could and would take advantage of the opportunity thus afforded. It is recognized that only a very small per cent. of the blind as a whole could profitably pursue a college course, and yet this percentage would probably equal the percentage of sighted persons who obtain higher edu-

cation. Less than two per cent. of the sighted receive college training; certainly two blind persons in every hundred will take advantage of higher education when it is made at all possible for them to do so. Even if only fifty blind persons could be graduated from the colleges of the country each year, there could be no doubt as to the practicability of doing so. In reality, the number to be educated has little to do with the practicability of providing the education. The number to be benefited by providing for the higher education of the blind may effect the means of provision but the matter is either practicable or not, regardless of numbers.

Efficiency in preventing blindness has a more direct bearing upon the practicability of higher education for the blind. It is coming to be generally realized that a very great part of blindness occurring in early life is due to such causes as ignorance, neglect, and accident, and that these causes may be very nearly eliminated by the proper measures. But persons blinded from such causes as these are most likely to be those possessing unimpaired intellects and physical bodies in other respects. Such persons constitute the normal and promising element among the blind, And, therefore, in so far as prevention becomes effective, it reduces the number of capable blind persons. This means that the average mentality of the blind as a whole will lower as prevention of blindness becomes more efficient. There is a question, then, as to the practicability of providing higher education for a group of persons whose level of mentality is gradually lowering. But the question may be answered by saying that there is everything to gain and nothing to lose. If higher education is provided, the blind may take it or leave it. If they leave it, then the community is out nothing for their higher education; if they take it, then the community is just so much the better off by having more educated persons in it. Furthermore, in spite of the most efficient measures of blindness prevention, there will always be accidents, and there will always be blind persons—though the number may be small—with superior intellects, and these it will pay to educate to the maximum.

It is not necessary to bring in evidence to show that a blind person is better fitted to make his way in the world when he has received college training. It is a recognized fact that earning power increases in direct proportion as education increases; this is true in the case of the blind as in the case of the sighted. A question arises in this connection, however: Will the blind

person have the chance to use his earning power? This cannot be used as a serious argument against the provision of higher education for the blind even though it be answerable accurately in the negative, but it is a serious problem to the blind person who has spent his time and effort to procure a college education. If the general public is so firm in its belief that the blind person cannot hold his own with the sighted in any sphere, as not to give him a chance, then this belief must be changed by the slow accumulation of evidence drawn from the lives of successful blind persons. Matters certainly will not be helped any by passively acquiescing in the belief that there is no use educating the blind since, due to public prejudice, they can never take any considerable place in the world. The thing to be done is to rid the public mind of this prejudice. And this can be done most effectively by educating the blind to such an extent that they can make their way in the world in spite of public opinion. When this point of view is accepted, there will be no doubt as to the practicability of higher education for the blind.

JUSTICE OF HIGHER EDUCATION FOR THE BLIND

The system of public education in the United States rests upon the fundamental principle that all persons shall have equal opportunity to develop the powers which they may possess. Pursuing this principle the state has done considerable toward equalizing the educational opportunities of handicapped persons by furnishing means of transportation to and from school for crippled children and such children as live too far from school to walk, by providing health inspection, and, in many localities, by providing even textbooks in order that the poor child will be more nearly on the same basis as the rich child. Blindness is a handicap far more serious than either lameness or ill health or even poverty, and blind persons, therefore, have the right to expect that steps shall be taken to equalize their opportunity to become educated. Such steps have already been taken with regard to elementary and high school education, but as yet not much has been done to make higher education as accessible to the blind as it is to the sighted. Concerning the right of the blind to educational opportunities, E. M. Van Cleve has said, "The blind child is entitled to the education befitting a citizen as much as a seeing child. Something more than this, with special opportunity and generous provision, is felt by the common mind

to be the common obligation to the child who is so unfortunate as to lose his power to see" (16).

But mere justice in the matter of higher education for the blind leaves out of account all together this "something more." The fact that this point has not been recognized is the chief cause of the delay in providing college training for the blind. Workers for the higher education of the blind have usually asked for more than justice, and their failure to get even justice is due to their excessive demands. A national college was first advocated not primarily on its own justice, but rather on the grounds that the Government had established a college for the deaf and it should do as much for the blind. It is now realized that this latter argument is faulty. The deaf have a far greater claim for special educational institutions than have the blind. Congress has recognized this fact all along, and has therefore not been disposed to create a college for the blind. And when educators of the blind, finally realizing that Congress would not establish a college, turned to scholarships, they again asked for more than justice. All of the bills which have been introduced into Congress on this subject have provided in one way or another for "all necessary expenses" of blind students in college. Justice can never sanction such measures. The state of Pennsylvania has an almost unlimited provision for the blind in this respect, and yet Mr. Burritt, Head of the Pennsylvania Institution for the Blind at Overbrook, maintains that the state is not doing enough for its blind. He holds that the blind student in college should be allowed an amount equal to the per capita cost in the school for the blind, and that five hundred dollars per annum is the very minimum. It is obvious that justice cannot uphold such extravagance. The blind want, and it is just to grant, only equal opportunity with the sighted. But what constitutes "equal opportunity with the sighted"? George W. Conner, a graduate of the Maryland School for the Blind, answered the question clearly when he said, "Considering the many disadvantages arising from the lack of sight, a fund controlled by each local board with which to employ a reader while at college, would be a fair solution of the problem, putting the blind student on practical equality with the seeing. Anything further would be placing a premium on blindness" (17). Justice demands little more, but certainly no less, than this. Of course, if a scholarship covering all expenses were offered to a blind student, he would accept it, just as the sighted student would do, but he has no just claim upon such a scholarship.

And yet, if justice so defined is strictly adhered to, most blind students will find it extremely difficult to take advantage of higher education. But a liberal grant of money is not what the blind aspirant to college needs; he needs a fair-minded public which will permit him to make his own way to and through college. The average sighted person must work, save, and sacrifice in order to go to college, and it is highly important that the blind person shall do the same. The blind student worthy of a college education will do so if he is given a chance, but the present state of public enlightenment as to the capabilities of the blind works an undue hardship upon those who find it necessary, and try, to make their way through college. The blind, then, must have not only equal opportunity with the sighted in obtaining higher education, but also a fair chance in the industrial world in order that they may take advantage of such equal opportunity.

The question of equal distribution of money among the blind might be brought up as an argument against any provision for higher education. Those who do not and can not take advantage of higher education where it is afforded, but who turn more naturally and profitably to the industrial world, may ask, why should the state give its whole attention to those few of the blind who choose to go on to college? Why should the state give three or four hundred dollars a year to those few of the blind who happen to have a liking for books, and leave those of us who are struggling to set ourselves up in the industrial world without any aid whatsoever? Give each of us the same amount of money for only one year, not four or five, and we will set up our news stands, our broom shops, and our grocery stores, and ask nothing more of you. These, indeed, are natural questions. But the same questions might be asked by the industrial sighted of any community as well as by the blind. The answer to such questions is that the state sees not only its duty, but its advantage as well, in raising the intellectual level of its citizens to the highest possible point. It is universally felt that intellectual development is to be sought as against mere industrial prosperity. It is realized that intellectual advancement will bring industrial development in its wake, but mere commercial activity will not insure the proper kind and degree of intellectual attainment. This answer must be sufficient for the blind as it is for the sighted. It is not a duty of the state to remove all burdens from its citizens, but it is its duty to see that all of its citizens have equal opportunity

to enjoy the rights of citizenship. In the United States, higher education is a right of citizenship, and therefore the duty of the state lies in giving to all equal opportunity to enjoy this right.

THE MEANS OF HIGHER EDUCATION FOR THE BLIND

The history of the movement in the United States for the higher education of the blind has been traced, the justification of such education has been given, and now it remains to point out the various means by which this education may be provided.

In history there have been presented two definite methods of affording higher education for the blind: one is the establishment of a college, the other is the providing of scholarships that the blind may attend the colleges and universities for the sighted. There are but two or three other courses possible, and they are minor courses, and are discussed here for the sake of completeness mainly.

Schools for the blind may expand their courses of study to include work of college grade. Strong arguments against such a course are obvious. Along with the evils of segregation and congregation, there would be the further serious drawback of the presence in schools for the blind of pupils who would not be able to profit by college training. There could be no hard and fast line drawn between those of the pupils who should go on to the college courses and those who should drop out. Obviously only a very small per cent. of even the high school pupils could profit by taking the college courses, but it would be a delicate and a difficult task to determine who should attempt the higher studies. The same difficulty is an ever-present one throughout the several departments of the existing schools for the blind. These schools are often compelled to keep pupils who are not doing standard work, and, although they may be doing sufficient to entitle them to a limited amount of attention, their influence on the other pupils and the standards of the school is far from a good one. So it would be in the college. This department, like the lower departments of the school, would often be obliged to keep and even to graduate those who would not be up to the standard. This would mean that the standards of the college department would never receive recognition, and would gradually lower. This difficulty might be overcome to some extent by granting certificates instead of diplomas to those who could not complete the prescribed work.

Such measure can be made most effective in the grades and high school, but the college department would be too small for its effective working there. It would be far better to do nothing at all for the blind than to give them higher education in connection with the schools for the blind, for some of the blind do go to college now and can command recognition, whereas if degrees were granted by schools for the blind, a person with such a degree would find little recognition by the public mind.

Another possible course would be for the existing schools to establish college departments, but separate from the lower schools, boarding the students in the same dormitories used by the lower school, or in separate ones as finances permit. But the same objections operate against this plan as against the former. Such a department could never be well equipped and thorough in its scope and training without unjustifiable expense, and the degrees granted from it would never be accepted alongside degrees from the best colleges. Such college departments would be thought of as small preparatory schools, and the blind person who wished to be educated and recognized as being so, would have to go to another college after leaving his own. So there would be little gain with much expense of money and time.

A third possible course in providing higher education for the blind would be to establish departments for the blind in connection with various colleges over the country. This is the best plan of the three yet discussed, but it has its serious disadvantages. It would not relieve the tendency or custom on the part of the public to think of the blind as a class separate and distinct from the rest of society. Such a department could hardly be kept up to the standard of the rest of the college. And besides, why should there be a separate department? Why not let the blind do the work along with the sighted? Readers and special aids must be provided in either case, but a great deal more satisfaction will be gained on all sides if the blind attend the same classes with the sighted.

It is evident then, that of all the possible means of providing higher education for the blind, there are only two which require any considerable attention. They are the establishment of a college, and the providing of scholarships. These are the two courses which have weathered the discussion of the past sixty or seventy years in the history of the movement for the higher education of the blind.

The idea of establishing a college was the first seized upon when men began to cast about for the means of higher education for the blind because this was the most obvious course. A college for the blind, of course, was the best means of providing college training for the blind, and men took up the idea without questioning it at all. And the National Government, naturally, was turned to as being the proper source from which such a college should arise. The National Government is the central power in the land, blindness is a nation-wide problem, the Government had established a college for the deaf, and therefore it seemed just and proper to expect the National Government to establish a national college for the blind. But for the past fifty years the matter has been discussed pro and con from every possible point of view. During this period the larger associations working in the interests of the blind have been now for and now against a college. Just at present general opinion is almost unanimously against such an institution and discussion of the college idea has been all but abandoned. Nevertheless, arguments for and against a national college for the blind should be reviewed as a matter of completeness.

It is difficult to find more than two points of importance in favor of a special college for the blind. One argument for a college is that it will afford better methods of teaching the blind. In the special institution, apparatus and methods peculiarly adapted to the teaching of the blind would be employed, whereas, in the schools for the sighted, it would be impossible to institute such facilities. In the special college, too, the teachers could be picked with regard to their special fitness to teach the blind. These seem to be important considerations, but with a little thought it is realized that the blind person who has gone through the grades and the high school of a school for the blind has had all the "special" training he needs. By the time he is ready for college he has usually gained an independence of mind and body which makes him glad of the opportunity to see what he can do in a world in which everything is not furnished for him. It is a fine thing for the blind person to find that he must adapt himself to circumstances which were not made especially for him, instead of expecting that circumstances themselves should be framed to meet his peculiar needs. Therefore, it appears that this point of "better methods of teaching" is not of much consequence.

Another argument in favor of the college is that it will reach

more students. This is certainly true, and if all other things were equal, this would be a real point in favor of the college. But in this case an increase in quantity would be offset by a reduction in quality, as will be seen later.

The points against a college are numerous: 1. It would be necessary for such an institution to be a university in order to meet the varied demands of the students, and the expense of establishing and maintaining a university would be so great as to be prohibitive. 2. A college for the blind could never be the equal of the best colleges of the land because it would necessarily be a small institution, and the best professors would not confine their abilities to so narrow a field. 3. A college for the blind could never gain any considerable academic recognition, because its standards, however high they may be placed in the beginning, would gradually lower to meet the capacity of the average blind student. And because of this fact, together with the present state of public opinion as to the capabilities of the blind, degrees granted by the college would become a hindrance rather than a help. 4. A college for the blind would have to be a privately endowed institution, for the state would not be justified in establishing a school of this sort. The state must be impartial and must offer equal opportunity to all, but a college for the blind would be more than "equal opportunity." 5. A national college for the blind could not offer equal advantages to all students over the country. 6. A college for the blind would but prolong the ill effects of congregation and segregation of the blind.

These points against a college for the blind will never permit its establishment except as some freakish move, and it is not likely that a college will ever be established at all in the face of what has been done already along the lines of providing scholarships for the blind in regular colleges and universities for the sighted. It is necessary, then, to take up the question of scholarships, noting the wealth of points in their favor, the problems which arise in connection with their establishment and use, and what has been done in the United States toward providing them.

There are many arguments in favor of scholarships as against a national college. One of the most important is that the method of scholarships does away with the evil of segregating the blind. Educators of the blind have come to realize that a group of blind persons congregated in one place for any length of time take on peculiar mannerisms, character traits, and modes

of thinking, even to a greater degree than a group of sighted persons similarly situated. There is always a tendency for any group of persons to individualize itself; this fact is fully recognized by sociology as shown by the modern methods of treating poverty, crime, and delinquency. Educators of the blind are recognizing the principle, and accordingly are advocating "the open door" as regards social and commercial intercourse between the blind and the sighted. Schools for the blind not only permit, but urge, their pupils to make sighted friends and to socialize with them. The placing of blind young men and women in *colleges* for the sighted is the step just below the placing of blind men and women in the *world* of the sighted. But the blind are not the only profiters in such an arrangement. As has been mentioned in the earlier part of this paper, it is inspiring to see blind persons succeeding in college and in real life, and therefore any arrangement which spreads the knowledge of such successes is a good thing for the community at large. Not only this, but the mind of the general public is enlightened as to the real nature and character of blindness, and is relieved of a long-standing and pernicious prejudice. Thus the establishment of scholarships for the blind in the institutions of higher learning for the sighted will further the great aim in modern education of the blind, namely, socialization.

Before continuing the discussion of scholarships in particular, it may be well to consider two or three questions relative to the main subject in hand, which questions arise in connection with social relations between the blind and the sighted. In the first place, it has been suggested(18) that those pupils in the schools for the blind who intend to go on to college should have two or three years of closer relationship with the sighted before the college course is attempted. This could be done by sending the pupils to high schools for the sighted for the latter years of the course, or by sending them to preparatory schools. Either of these courses is all right, but neither is necessary. The blind child should from the very first be given as many contacts as possible with the sighted world, and then when he attains a college age, this world of the sighted will be not a new but a familiar world to him. Then too, it is usually in the high school years that the pupils learn piano tuning and other trades which are likely to prove extremely useful to him in a financial way even though he go to college. If he is sent to a preparatory school, or if he is put into a high school for the sighted in his home town, the chances are that he will never learn such

trades, but it is highly important that he shall learn them. And furthermore, if the practice of sending the best pupils from the schools for the blind out into schools for the sighted ever becomes very general, the schools for the blind will be compelled gradually to lower their standards to meet the capacity of the duller pupils. This would be a disastrous thing. What the high school departments of the schools for the blind need is more standardization—higher standards, and those maintained. It is no credit to anyone that the graduates of many of the schools for the blind must attend some public high school for a year or two before they are prepared for college. It is necessary only that the importance of socializing the pupil be early recognized, and that the high school departments be standardized and accredited, and then there will be no necessity for the blind boy or girl who intends to go to college to spend time in schools for the sighted before entering college.

In the event of scholarships becoming extensively provided and used, it is of the utmost importance that the blind shall not be handled in the congregate. Where there are two or more blind students in the same college, it is important that they do not associate themselves in any way which will lead the public to think of them as "the blind students." In the brain of some soft-hearted philanthropist there will blossom the idea that it would be a good thing to furnish a suite of rooms for the blind students, or to give them tickets *en masse* to the theater, etc. This is the very sort of thing which workers for the blind are seeking to eliminate. Blindness craves equality, and that alone. More than equality does more harm than good.

This broad social argument is doubtless the most important, but not the only point in favor of scholarships for the blind. Another consideration at least worth mention is the fact that providing the blind with scholarships will enable them to attend the best colleges of the land. It has been seen that one great drawback to the national college would be that it could never attain high academic recognition. A blind person must take advantage of every source of power and influence open to him, and an education from a high class college is no inconsiderable source of power and influence.

Scholarships will have a nation-wide influence on the public mind, whereas a national college would be extremely limited in its influence. It would be very difficult to advertise effectively a college and its work, because the general public is not interested in the blind and matters concerning the blind. But if it is

possible to put a blind student or two into this and that college for the sighted over the country, the whole country soon will come to know that blind persons are real human beings who can go to school and learn and go out to take their places in society. And so soon as the general public comes to realize that the blind are educable and capable of accomplishing even as sighted persons accomplish, then, but not until then, will vanish more than half of the handicap of blindness.

The establishment of scholarships will tend to raise the standards of the schools for the blind. This argument has been urged in favor of a college, but it is stronger in connection with scholarships. If a college were to be established, its *raison d'etre* would lie in the fact that it accepted pupils from the high school departments of the schools for the blind and gave them a college education. Therefore it would try to receive as many students as possible from these schools. In thus straining to justify its existence, it would very likely take pupils who would not profit by the college training, and could not measure up to the initial standards set. This would lower the college standards, and the schools, finding that the college would take their pupils without much questioning, would have no incentive to require standard work in their high school departments. Whereas, if the graduates of the schools for the blind are to enter colleges for the sighted, they must be well equipped before the college will accept them. In other words, the college for the blind will depend upon the graduates of the schools for the blind for its existence, but the colleges for the sighted are affected very little either way by the attendance or the absence of blind students. And therefore, in the case of scholarships, the responsibility is placed where it ought to be—on the shoulders of the high schools for the blind.

Scholarships will have a better influence on the characters of the blind students than would a college. There is no questioning the fact that it takes more courage and more self-reliance even to enter a college for the sighted than one for the blind especially. The theory goes that such traits of character are generated in proportion as they are seen to be needed; therefore it is highly important that the blind shall hitch their wagons to the highest stars. The result in this case will be the development of a higher degree of independence and self-respect.

Providing scholarships will be far less expensive than establishing a college for the blind. According to the United States Census for 1920, there are not many more than five thousand

blind persons under twenty-five years of age in this country; and granting that two per cent. of this number would go on to college (and this, perhaps, is a high percentage), there would be about a hundred persons to take advantage of scholarships. At the rate of three hundred dollars per person, scholarships for this number would amount to thirty thousand dollars. It is obvious that no adequate university can be maintained on thirty thousand dollars a year. And this is leaving out of account altogether the initial expense of establishing the university.

The provision of scholarships affords a more equitable distribution of the expense of higher education for the blind. Scholarships are now considered state affairs primarily, because each state has its own Board of Education and other machinery for carrying out educational measures. Thus each state can provide scholarships in proportion as they are needed, and the expense of higher education for the blind will be distributed in accordance with the distribution of blind persons wishing to do college work.

But the fact that scholarships are being provided is the most convincing argument in their favor. The following concluding paragraphs will show the extent to which such provision has been made.

The state of Connecticut was first to make any provision for advanced education for the blind. This state created a board as early as 1893 which has charge of securing education for its blind in other states having facilities not afforded in Connecticut. The board was given almost unlimited power in this respect, and so it can provide for the higher education of blind persons, though higher education was not specifically designated.

New York was the first to make specific provisions for the higher education of blind persons. In 1907 this state passed a bill providing for each blind student regularly attending an institution of higher learning in the state the amount of $300 to be used in securing the services of a reader. The bill limits to $3,000 the total amount to be granted in any one year.

In 1912 New Jersey passed a bill providing $200 to cover tuition and fees and $300 to procure a reader for each blind person attending a college of the state.

In 1913 three states passed measures providing scholarships for the blind. Missouri passed a bill carrying the same provisions as the New York bill. Ohio provides an amount not to

exceed the per capita cost in the state school for the blind, with which a reader may be provided for each blind resident of the state in college. The distribution of such funds is in the hands of the Superintendent of the school for the blind, and students are restricted to colleges of the state. California passed a bill providing that certain colleges and normal schools might spend as much as $300 per person, but not more than $900 in any one year, for readers for blind students. But this bill was later declared unconstitutional.

In 1915 Minnesota passed a bill allowing the directors of the state school for the blind to use money appropriated for the maintenance of that institution to pay expenses of blind students in college under the following provisions: that not more than $1500 be used in any one year for the purpose, that not more than $300 be granted to any one person, that each person so aided shall have been a resident of the state for five years previous. The bill did not restrict students to colleges of the state.

In 1915 also, Wisconsin passed a bill very similar to the provision made by Minnesota.

In 1921 California rectified her mistake of 1913 by passing a bill providing $300 for a reader for each blind student in any college chosen. In this same year Pennsylvania made very generous provision for blind students in college. The bill does not limit the time of any individual in college, nor the amount to be spent on any one individual, providing for "all necessary expenses." There is no restriction to colleges of the state. There is, however, a limit of $3,000 on the total amount to be spent in any one year.

In 1922 Oregon passed a bill providing that a maximum of $500 might be spent for readers for blind students in Oregon University or Oregon Agricultural College.

Thus it appears that after some seventeen years since the first definite provision was made in this country for the higher education of the blind, only ten states have made any such provision. This is not a record to boast of, but it is a beginning, and seemingly in the right direction. It is simply justice for the state to provide a reader for the blind student attempting to gain an education which the state furnishes free to sighted persons. And if this fact be presented in the right way, the state legislatures generally cannot fail to recognize it, and provide for the higher education of the blind in this respect.

But the state bears by no means the whole responsibility of working out this problem of higher education for the blind. There are at least two essential points in the problem which rests elsewhere than in the hands of the state. One of these is that pupils in the schools for the blind must be fitted to receive higher education. In an earlier part of this paper a plea is made for accredited high school departments in the schools for the blind. Accreditization is the very least that can be done toward making possible higher education for the blind. But in this case, accreditization means not simply a well worked out curriculum of study; it means also as highly competent a teaching force as it is possible to maintain, and, above all, a serious spirit over the school in general and among the pupils of the higher grades in particular. It is the duty of the authorities of the schools for the blind to secure this proper leading of the pupil up to higher education.

But besides a standardized curriculum, the proper teachers, and a wholesome and serious school spirit, there is, in the case of the blind, yet another provision necessary to better enable the pupil to enter and successfully complete a college course. This is the putting into raised type of the classics in the arts and sciences as has been done in literature. The American Association of Instructors of the Blind recommended as early as 1872 that a complete set of college textbooks be put into raised characters, but today, after fifty years, there are not more than two hundred articles, essays, pamphlets, and books of a character which would warrant their existence in a college library, in any raised type at all. This estimate includes all branches of learning except history and literature. This is certainly a shameful condition, and it should receive first consideration in any move toward providing higher education for the blind.

The second of the "two essential points" referred to above relates to the public attitude toward the blind. Half of the whole problem before educators of the blind consists in educating the public to just and proper beliefs and sentiments concerning the blind. And yet, in a way, this point too resolves itself to fitting the blind person for higher training, because in the last analysis, the public can be educated only through examples and demonstrations of what blind persons can do in actual life. And therefore, it becomes of the utmost importance that the schools for the blind shall turn out as full graduates only those who are efficient economically, and com-

petent socially. It is not within the scope of this paper to discuss the matter in detail, pointing out the best ways and means which the schools for the blind may employ toward obtaining the highest degree of economic efficiency and social competency, but in any discussion of higher education for the blind it must be remembered that it is absolutely necessary to train for an attitude as well as to tease for the mere physical means of college training for the blind.

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THE SPOKEN DRAMA VERSUS "THE MOVIES" FOR CHILDREN

ALICE MINNIE HERTS HENIGER

In 1907 I made a survey of the Motion Picture Theatres of Greater New York and in October of that year a series of articles written by me and entitled, "The Child and the Motion Picture Theatre" appeared in Collier's Weekly. The articles were accompanied by photographs which I had taken of several Movie houses which then existed and many of them were on the ground floor of tenements. That was before the Tenement House Department passed the law forbidding public places of amusement to be part of a dwelling house. The entrance fee to these movies at that time was five and ten cents. These movie houses were supplemented by many places where by dropping a nickle in the slot one could see a sort of moving picture which lasted from ten to fifteen minutes. These places of entertainment were called "Nickelodians."

Before writing these articles for Collier's I made a very thorough and careful survey of all these places and in my articles I made the statement that thirty thousand children daily were frequenting these Moving Picture Theatres. I also made perfectly clear deduction of how the commercial manager had been wiser than the educator, inasmuch as he had organized childhood's dramatic instinct to his *own* profit, whereas the educator had failed to organize this same universal instinct to the *child's* profit.

That tenement basement theatre of 1907 today is the Motion Picture Palace, one of the five greatest industries of our country. The magic lure of its splendor reaches from coast to coast, and tales concerning its wonders, which rival in fantastic magic those of Haroun Al Raschild and the Arabian Nights, are told with bated breath by men, women and children everywhere.

There is something almost uncanny about the way in which screen producers juggle money. This marvellous screen star has just entered into an arrangement whereby she is to receive five thousand dollars a week. This *great* actor retires to his magnificent estates in Beverly Hills and announces his intention of writing for the great art of the movies.

Before the eighteenth amendment was enacted and whenever the motion picture industry was discussed, people used to say that the Movie represented a great national salvation because it was the poor man's theatre and its delightful interest kept men away from the saloons. Now that there are no more saloons they say, "Well, the whole family hurry through their dinner, then the husband and children help the mother wash the dishes, and the whole family go to the Movies." Heaven help us! I think they do. Surely all over the country are occurring such cases as came directly to my notice eight years ago when I was lecturing at Indianapolis.

A young mother rang me up and asked if she might bring her little girl of nine to see me. She said the child was very gifted dramatically. I told her to bring her along. When they came to visit at my hotel the mother and child had just been to see a screen version of "Snowwhite and the Seven Dwarfs." The mother said to the child in order to get her to talk, "It was a lovely picture, darling, wasn't it?" The child replied hesitatingly "Ye—es, quite nice, but next time let's go to see a real play where a man runs away with another man's wife." The mother seemed very much shocked and also greatly surprised that I was not shocked at all, for the child's reply seemed to me the most natural thing in the world when the little girl said: "I always go to see every moving picture that comes to our neighborhood." I told her in return more about "Snowwhite" the spoken play when it was given at the Little Theatre in New York. She said she too would like it that way and she would love to see it if actors spoke. I ordered tea for the party and before taking my own cup I handed the child a cup of tea much diluted with milk and hot water. The mother said "I never allow her to drink tea or coffee even with a lot of milk."

I had to exercise much self control to remember that my guest was a perfect stranger to me and so not to say to her: "You are a mother like so many others, careful to the last degree of what your child eats and drinks. You will not allow her to take in through her mouth anything that may injure her body, but you allow her to take in through her mind all that may injure her soul and then you are hurt and surprised if the injured spirit disclose itself. The tea could not hurt the child permanently and a dose of oil will eradicate the evil effect of bad food, but I know of no ready purgative for the polluted

spirit of your little daughter, and the spirit lives when the body is no more."

I can match the case of my young friend from Indianapolis in every city of the United States. I can match it and then I can multiply it by hundreds of thousands. It exists to satisfy the greatest craving of the human spirit, the craving for recreation and so quite logically the moving picture is one of the half dozen greatest industries of our country. It is universally called "The Theatre of the People." It engages in its operation more helpers than the legimate theatre has ever engaged, it pays larger salaries to its stars. It has its own magazines. It engages the services of good orchestras to accompany its mechanical effects and it builds palatial structures which each season increase in size. It has for its backing the tempting and well nigh inescapable power of money riches and it has attracted this power to itself quite honestly. The majority of its workers live in beautiful California, in such lovely places as Hollywood and Beverly Hills. Its important directors have far greater personal power than King George of England or than any King. At their will a reproduction of Nero's palace may be built in five days and destroyed in as many minutes. They command a most intelligent army of carpenters, electricians, scene painters and costumers working together in happily unified effort.

I watched a Movie King Director of this type "shooting" a picture at his studio in Hollywood last September. He is a man whom I had known well as a boy when he worked in the domain of the fine arts, in the noble art of drama.

After working several years in the legitimate theatre he seized an opportunity which offered to go West and grow up with the movies. He was one of those pioneers from the East to the West and he entirely deserves both his reputation and his fortune. His mother told me how, when he took his first picture out in Hollywood and packed it up to carry back to New York to show the distributors, he was obliged to fire several pistol shots on his way to the railway station in order to protect himself; so jealous was Western genius of Eastern enterprise, in this rapidly developing commercial art.

I watched this Movie King for one whole day, from the time he stepped out of his luxurious Pierce Arrow car until the time he re-entered it to return to his home. I timed his operations. Four hours were consumed in directing the heroine to enter a door and to show the combined emotions of surprise and

gradually dawning anger at seeing the man who had betrayed her mother, now the prosperous husband of another woman. The director had an image in his own mind of just how these mixed emotions should show upon the screen and he spent four hours at an overhead cost of about two thousand dollars trying to get his idea into the mind of the heroine. Finally in despair he gave the title writers these words, "She shows surprise and anger."

So you see, as John Corbin has truthfully said, "Even at the movies, when every effort has been made to tell a plain tale in terms of moron mentality half the time is consumed in explanatory phrases." After an intelligent director has, during four hours, used every resource at his command to endeavor to get two such primary emotions as surprise and anger *over* for an average movie audience he is then obliged to tell in words the story his heroine is trying to tell through facial expression—Why?

Because producers of motion pictures are dealing with a mechanism, an industry, call it at best a mechanical art, which can be and is, efficiently exercised by mere trained habit, rote and calculation. I saw it so exercised during the time I watched the best known producers working with the most celebrated screen stars at Hollywood last autumn. I then became entirely convinced in the belief I had always held that the "Moving Picture" should not be called "The Silent Drama" as opposed to "The Spoken Drama." Both nomenclatures are fundamentally erroneous.

The only correct term is "Drama"which deals with the expression of human feelings in spoken words and acted gestures. Of all the materials in which drama deals the spoken word is most potent and that is why the motion picture director could get the idea over to an average audience in a few seconds by flashing the words "surprise and anger" on the screen. But thus flashed on a screen those words do not fulfill their legitimate purpose in drama, because they arouse no emotional response in the audience. They are dry devitalized husks—not really words at all, thus used.

Emotional responsiveness of the audience is the first and last reason of the theatre. Unless the player has made you thrill and tingle with responsiveness to the verity of his characterization you have not gained anything from the play. You may have been amused and entertained in a way at the Motion

Picture by tickling of your senses but your senses have not been aroused to become organs of your mind.

You placidly gaze at the art of the screen showing a rosy dawn, tinting the glistening waters of a mountain stream. This is shown you in advance of the picture plot in order to put you into a receptive mood for the "atmosphere" of the picture. But if a most mediocre actor, whom you could not even see, were to speak from the wings Shakespeare's immortal words:

> "But look the morn, in russet mantle clad
> Walks o'er the dew of yon high eastward hill"

you would respond to the atmosphere far more surely and more readily.

I heard a sophisticated woman say at a luncheon, not long since, "I saw a wonderful actress last night in a new play." My neighbor at the same luncheon was a young girl who many years ago had been an active member of the Children's Educational Theatre. "Who was the actress?" inquired my young friend. "Theda Bara" replied the woman. "Why we do not call her an actress," replied my young friend. "We have never heard her voice. To be an actress one must have a voice."

But it is not my purpose to inveigh against the "Movies" as an amusing pastime for men and women. I am certain that they have their excellent purpose in the field of recreation for the adult whose tastes in this field are already formed.

It is true, I should like to have the adult public understand that Motion Picture Palaces are not Theatres in the true sense of the word and that drama is literature or it is nothing, but my mission in the field of the movies does not concern itself with the adult.

The adult goes to the movies with indolence and inertia, craving amusement. The child goes to the movies with the mental alertness which he carries into everything. In the earlier stages of life, this alertness and the corresponding degree of definiteness of perception, are insured by the child's physical activity. The child is not dull, lethargic, indolent and inert like the average adult. He wants to do something with what he sees, to reproduce, to take apart and put together, and this is the best possible preparation he can have for future analysis and synthesis.

All this being true, I hold my brief today as I have held it with increasing tenacity through more than two decades; for

the Children—I say with authority of long experience with children and the theatre and also with some little knowledge of genetic psychology that the Movie, as recreation for children, is inadvisable.

The most powerful instinct with which the child is endowed by nature is the dramatic instinct, the instinct to "make believe" to "play it is." It is a creative instinct and is at the root of the faculty of the imagination.

This totalizing faculty of the imagination with which all the intellectual and emotional forces of life are concerned, is ruined in children by constant attendance at the Movies.

The percept, or thing which they perceive, is neither accurate nor complete as staged in the motion picture play. The educational principle of the teacher is that Perception—Memory—Imagination and Thinking are stages of mental development and that one grows naturally out of the other.

Drama is not life but true drama is a reflection of life whereas the Motion Picture is nothing of the sort, but the untrained mind of the young child is not always able to distinguish between the real and the artificial.

Yet the child has within his unspoiled soul a real instinct for all that is best in drama. The Movie cannot entirely kill his spontaneity and his interest for what is best, but it may hurt them seriously. We all know that every child has uncontrolled impulses which must be carefully trained to volitional actions. The imagination in childhood is more powerful than the will. Since then true drama deals with the imagination, long experience has shown me that children, through the right use of their unspoiled dramatic instinct can learn any and every lesson through the medium of drama.

Parents and teachers realize this postulate a great deal more clearly than they did twenty years ago and so they argue, since children are so interested in drama and since plays for children are expensive and difficult to produce in the legitimate theatre we will form committees to secure better moving pictures for children. We will get the film directors to produce for the children what we believe the children ought to enjoy.

Now this is the very worst argument regarding children and the theatre, for we do not want to give children what *we* think they *should* enjoy, we must aim to give them what in reality they *do* most heartily enjoy, which is the very best in drama. What the adult enjoys with his jaded vitiated appetite is no criterion at all of what the child's fresh, unspoiled dramatic

instinct craves, so that the usual adult, including the dramatic critic, believes in playing down to the level of the child. The real object in all dramatics with children is to play *up* to the pinnacle of youth's dramatic imagination, which pinnacle towers away above that of the adult.

Children do not care particularly about seeing Barrie's lovely fantasy of Peter Pan enacted by any particular star; the play itself is what appeals to them and every character in it is to the child an image of his imagination come true. They love Barrie's fanciful creation but they are not set upon the personality of the individuals who characterize this creation. If Mary Pickford, that consummate ideal of the movies, should play Peter Pan, children would not enjoy it half so well as they would enjoy the spoken play—given with an all round adequate cast and no stars.

Some years ago a veteran New York theatrical manager said to me "Just think of the progress that has been made in the last ten years in the moving pictures. We are now able to show the child many of Dicken's novels dramatized for the films. They say children do not read Dicken's nowadays but after these productions I am sure we shall have a return to the reading of the fine English authors."

But as a matter of record, it does not work that way for a questionnaire was sent out to a multitude of children who had seen "Jackie Coogan in Oliver Twist" and after seeing the picture not one half of one percent of the children had read the book. Moreover, little Jackie Coogan presents no real idea of Charles Dicken's "Oliver Twist." He is entirely too young for the part but he made a hugh success in "The Kid" with Charlie Chaplin so he is featured in the dramatization of Oliver Twist in order to enrich the film producers.

Exactly the same thing occurred in the picturization of Mark Twain's "Tom Sawyer." I read this book to two children before taking them to see the picture. I confess to having taken them to the picture chiefly to watch their reaction. As we stood up to put on our coats before going out both boys said "It just spoils the book. I wish they would take it off and play something else."

Much to the dismay of teachers of literature in various schools it has been noted that, when asked to write a synopsis of a book, children write the story as they have seen it pictured on the screen, not as the author told it in his romance. When

asked if they had read the book the invariable reply was "No, I saw it in the moving pictures so I do not need to read it."

Several years ago certain statements, accredited to Thomas Edison, concerning the child and the motion picture, were spread abroad in the educational world. It was said that he planned to make a type of picture for use in schools, that would so interest the mind of the child as to revolutionize teaching. For example, he would show the working of a pump after assembling on the screen the various parts that go to make up the pump. In that way would the boy be led to try to make for himself and assemble these parts and the inventive faculty would be stimulated and developed.

But the imaginative faculty of the child does not work in that way. It is true that before a thing can be achieved we must have a mental picture of it but a screen picture is not a mental image or a percept and screen pictures do not develop the apperceptive faculty of the child. They appeal only to the sense of sight and any such method of teaching in our schools would run the grave danger of making for the future an eye minded generation. It is a serious mistake to develop one sense to the exclusion of all the other senses.

Several years ago I was asked to be present at the showing of a series of so called "Educational Moving Pictures" done in color. The firm showing them desired educators to attest to their great value for classroom work. The first picture shown was the development of a rose from the planting of the seed to the opening from the bud, then the full blown flower. The coloring was very beautiful and the picture was altogether well done and I thought it was the *most uneducational* demonstration I had ever viewed, for it was begun and finished in the space of one minute.

For the mind of the child, and especially of the American child, the greatest lesson to be learned from the processes of Mother Nature is the lesson of patience. The ground is prepared for the seed, the seed is planted. Aided by sun, air and water the seed germinates, throwing up little shoots above the ground and little root tendrils below the ground. The child is taught to clear away the weeds, but not before the tiny leaves declare themselves; and so on through the entire wonderful process.

When children are taken very young and are themselves allowed to attend to the entire process of growing a garden they become deeply interested in one of the most wholesome

activities that children can develop. But to endeavor to induce in children a love of flowers through film reproduction is to make the mind and soul of the child sterile to all the great reproductive beauties of nature.

It is a sad comment on our educative methods that children today and girls in particular, have very little interest in nature lore. Many children now live during the summer months in camps situated in the heart of beautiful woods and nearby country roadsides and a large percentage of them care nothing about becoming acquainted with the trees, the ferns, the wild flowers and the birds. The children are inoculated with the speed microbe as they dash along the roads in fast autos. This is just as true of the child of the farmer who does not know the commonest wild flower that grow at his very door, as it is of the city child.

Shall educators add to the speeding up process by showing children the development of the rose and the working of the pump, all accomplished in one minute on the screen?

Everything is done so quickly nowadays it is quite a triumph to interest children in a quiet walk along the country roadside and to induce them to look up at the birds and the leafy trees, and to look down at the ferns and mosses, not to look just straight ahead. In other words it is much harder than it used to be to develop perception in children.

The motion picture will never develop the cosmic consciousness of the child no matter how many scenes of foreign countries are thrown upon the screen. It will for the passing moment excite the child's senses but it will never excite his richest emotions. It will give him superficial acquaintance with a hundred things and a mastery of none.

Now while it is true that theatres especially adapted for children, do not exist, the New York theatres two seasons ago produced many plays which children heartily enjoyed and through which they have profited eternally. For example, none have revelled in the delights of the Shakespearean revivals more genuinely than the boys and girls. For our children "Hamlet" was a dead issue buried in the stuffy pages of a book, until John Barrymore brought him to life. During the holiday season I saw many children reading the play because their wise parents had purchased tickets for them to see it, as their Christmas treat, and since they were to see the spoken drama they craved to know what Hamlet spoke.

The same was true of David Warfield's "Shylock," in which boys especially revelled.

But to counter balance the Shakespearean plays which boys prefer, the most ideal play ever written for girls was produced namely, "Romeo and Juliet."

The adolescent girl has not entered into her heritage until Juliet becomes for her a reality and Jane Cowl in the 1924 production made her so. She gave the girls entrance into the inmost sanctuary of Shakespeare's genius. She made her see that although Juliet, like Portia, is the child of opulence and splendor, that she has been nurtured in a palace and clasps her robe with jewels, still she is the very acme of simplicity, of truth, of loveliness, of character.

How truly it has been said that "although Romeo and Juliet are in love they are not lovesick." The passion which takes possession of Juliet's soul is unerringly recognized by the twentieth century flapper, when she sees vitalized the enthusiasm of a true confiding love.

> "My bounty is as boundless as the sea,
> My love as deep; the more I give to you
> The more I have—for both are infinite."

When some of our daughters may vicariously live through such an experience shall we feed them the dry husks of the movies? Shall we not rather work out a plan whereby we shall be able to give to the rising generation throughout this entire country the developing forces of good drama.

It is certain that unless we provide for our children the right kind of dramatic entertainment, the kind that will meet the need of their unspoiled dramatic instinct, public life will have to suffer for it. In any community where the senses are not developed as organs of the mind the people of that community are apt to remain the playthings of their lower instincts. They will prefer yellow covered hair raisers to fine and noble literature. They will prefer on the stage of the theatre and also on the stage of life the cheap devitalized movie to the human and noble art of drama. They will be impressed by glaring, noisy outer success, by quantity instead of quality and true values. They will be swept by every passion of the crowd, applauding mediocrities that, for the passing moment, may gain the fancy of the public, quick victims to every stupid fad and fancy.

Children know by instinct that ideals of truth and beauty, of progress and of morality, of happiness and love and religion may best be taught through the art of drama, therefore only the best in drama is good enough for the child and the usual devitalized form of drama which the movie presents is not for the child at all.

Camp Songo,
Casco, Maine.

Accepted for publication by
WILLIAM H. BURNHAM

SPURIOUS CORRELATIONS IN PSYCHOLOGY[1]

JAMES QUINTER HOLSOPPLE

Throughout the development of the statistical method in psychology various cautions have come to the psychologist from mathematicians well informed concerning the numerical relations involved in statistical formulas. Even though the mathematicians knew little about the nature of the phenomena upon which psychological measurements are made, these cautions have usually been both pertinent and useful.

When anthropometrists first began to find correlations between indices of various kinds, such as that between Z_1 and Z_2 where $Z_1 = X_1/X_3$ and $Z_2 = X_2/X_3$, Pearson (1) pointed out that the resultant correlation involved an error which he termed a "spurious correlation." That is, even though X_1 and X_2 were uncorrelated there would be a positive correlatiion between the two ratios due to their having the same denominator X_3.

Wicksell (2) showed how astronomers might fall into the same error and derived a formula, more exact than Pearson's, for determining the value of "ρ" (the spurious correlation).

Only within the last year, however, has the psychologist received this particular warning. Musselman (3) cites as an example of a spurious correlation that between the marks made in a psychological test (by which he means an intelligence test) and the marks made on the arithmetic problems in the test. He points out the error into which we may fall through overlooking the fact that a spurious correlation is obtained whenever the measurements from one set of data are included in those of the other set used in the correlation.

If this error is really considerable it is worth while to examine the data which we ordinarily correlate in order to find out; (1) if we do use correlation coefficients involving an unquestionably spurious correlation, (2) if many of the correlations which we find are not actually of this spurious variety even though they appear at first glance not to be spurious,

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1. A paper read before the meeting of the Southern Society for Philosophy and Psychology, at Baltimore, Md., April 22, 1924.

(3) if it is possible to avoid with certainty obtaining a spurious correlation, and (4) if it is desirable that we should avoid doing so.

The question might properly be raised here as to just what is meant by correlation when the term is used both by mathematicians and psychologists. Probably the old definition of correlation as a "tendency toward correspondence between the variates of two series of measurements" is sufficiently accurate. At least it provides common ground for further argument. This definition, of course, would include both spurious and legitimate correlations.

The fact remains, however, that the mathematicians who have developed formulas for the measurements of this tendency have recognized two distinctly different types of correlation.

For example, the amount of rainfall might be measured in inches and the wheat production per acre in bushels. A positive correlation would then be found. There occurs in neither of these two series of measurements any element or factor included in the other series. Pearson's product-moment formula may be applied and the resultant coefficient would be recognized as a valid measure of the correlation. Perhaps it might be said in this case that the deviates of the one series bear a causal relationship to the deviates of the other series.

In addition to this type of correlation there is another unquestionably different sort. In the two series of measures the deviates may be uncorrelated, causally or in any other way, but merely by virtue of having a common element, identical or nearly so, yield a positive correlation coefficient when subjected to the treatment of a correlation formula. This is the sort of correlation which has been termed erroneous by Musselman, and which various mathematicians have insisted should always be considered.

If it can be shown that spurious correlations are not only inevitable in psychological statistics but are desirable, questions naturally arise concerning the advisability of continuing in our indiscriminate use of the term correlation when we may mean either the spurious or the legitimate variety.

If we do discriminate between the two forms we will not be accused by mathematicians of falling into error, and we will be able to use the mathematical methods appropriate to each type of correlations. If, on the other hand, we find that it is impossible in psychological measurements to discriminate

between the two forms we become involved in many sorts of difficulties; for example, we might conclude that our mathematical procedures and inferences which are appropriate only to legitimate correlations may not constitute an altogether proper method of attack on the determination of the relations between sets of psychological data.

We must admit, in the first instance, that we do use correlation coefficients which involve an unquestionably spurious correlation. That is, as Musselman points out, we do sometimes correlate the performances in the arithmetic part of an intelligence test with the total test scores. It is doubtful, however, if any psychologist is so non-mathematical as not to know that his correlation coefficients thus obtained will be "too high." That is they will be higher than they would be were the sub-test scores not included in the total scores used in the correlation. In actual practice, a single test such as the arithmetic is not correlated with the test as a whole in order to determine the relation between "arithmetic" and "intelligence." Each one of a whole battery of tests is correlated with the total performance and the resultant coefficients are compared. It is solely for convenience that the special test scores are not separated from the total test scores of every individual in finding each correlation.

This correlating of sub-test with total test scores is not, of course, an ideal procedure since the various tests are weighted differently in scoring the complete test and since the amount of spurious correlation obtained in each instance varies with the weighting applied to the particular test. (It does not vary, as Musselman says it does, with the *number* of problems of each kind.)

Thus if we find an r of .35 between the sentence completion test and the total test score and an r of .40 between the arithmetic and the total test scores we know that, due to the introduction of a spurious correlation, both coefficients are too high. But we cannot say how much too high either one is.

The mathematician's warning in this case is evidently justified and the adequate procedure is perhaps obvious. We might disregard convenience and separate the special test scores from the total test scores of all individuals before making our correlations, and thus avoid the error of finding a spurious correlation.

Whether many of our correlations are not actually spurious even though they appear at first glance not to be so can

be decided only on the basis of an analysis of the activities involved in the psychological test and an analysis of the performances with which the test scores are correlated. Let us suppose, for example, that we correlate the scores obtained from the arithmetic part of an intelligence test with the grades made in first year mathematics. Or suppose we correlate the grades made in English with the scores from the sentence completion part of an intelligence test. Apparently neither of these correlations would be called spurious.

Yet we know that in the arithmetic test certain abilities which enable the student to make a high score also enable him to make a good grade in mathematics, and similarly for the sentence completion test and English grades. After all, the fact that we do find a correlation may be due to our measuring in both of the correlated series the same phenomena or phenomena which upon repeated measurement show little variability. We might suppose that the total performance in the arithmetic test x is composed of the factors a, b, c, and d and that the class room activity y is composed of the factors a, m, n, and o (where b, c, d, and m, n, o are uncorrelated). Then if we correlate x and y we would find a spurious correlation due to their common element a.

The logical possibility of the truth of this assumption is substantiated by an examination of a few typical correlation coefficients. If our supposition were correct we would expect to find more common elements in a synonym-antonym test and an English grade than in a synonym-antonym test and a mathematics grade, and whenever there are more common elements the correlation coefficient would be higher due to the introduction of the spurious element. We actually have found:[2]

(With the Yale, Anderson tests, Form 2)

Synonym-antonym test and mathematics grades,	$r = .271$
Synonym-antonym test and English grades	$r = .455$

The inference that the difference in size of the correlation coefficients is due, partly at least, to the differing number of common elements is almost inescapable. From this inference would follow the conclusion that the difference between the two coefficients is a matter of spurious correlation.

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2. The illustrative correlation coefficients herein shown are used by the kindness of D. W. Seago, and will be published by her in connection with another problem.

If we go further and compare the English grade, synonym-antonym correlation with the correlation between English grades and a combination of tests such as synonym-antonym, opposite, and definition, where we introduce arbitrarily more common elements, we find a significant *increase* in the size of r.

(Coefficients taken from the J. H. U. tests)

Synonym-antonym and English grades	$r = .484$
Combination and English grades	$r = .531$

The fact should be pointed out here that it is *not* always possible to tell *a priori* whether there will be many or few common elements in two correlated series. For example, we might expect that there would be more common elements in an arithmetic test and a mathematics grade than in an arithmetic test and an English grade. Yet we find:

(Yale, Anderson, tests)

Arithmetic test and mathematics grades	$r = .337$
Arithmetic test and English grades	$r = .377$

The coefficients are almost the same, and with an analysis of the actual classroom material, the inference that the number of common elements is not very different is reasonably acceptable. That is, the performance in a simple arithmetic test is qualitatively as different from the performance in the calculus and analytics class as it is different from the performance in the English class.

On the basis of these facts we must at least admit the strong probability of almost all of our correlation coefficients containing a spurious element. It may be even true that they are wholly spurious.

Since mathematicians have developed appropriate formulas for spurious correlation, which formulas are not interchangeable with Pearson's product-moment formula, it is only fair to them that we should consider our data with this point in mind.

At present there seems to be no way to tell whether our correlations are spurious or not. We might suggest, therefore, that we introduce deliberately all the spurious correlation possible. That is, try to make our entrance intelligence examinations, for example, consist only of measurements later repeated in the classroom (with the provision, of course, that the tests contain a fair sampling of classroom activity).

If we then admit that our correlations are wholly spurious, and desirably so, we can hardly be accused of "falling into error through overlooking the fact." An additional hopeful possibility is that we will be supplied with mathematical correlation methods, appropriate to our spurious correlations, which will give a more accurate picture of the relations between our series of data.

In looking forward, however, to the general recognition of the spurious nature of our correlations it should be pointed out that every formula heretofore developed for the determination of the spuriousness of a correlation presupposes an analysis of the elements in each variable and a knowledge of the functional relations between these elements and the deviates of which they are a part. Such a knowledge can be derived only from an experimental analysis of the highly complex activities which in most correlations are represented by a single but by no means simple numerical value or "score."

From the Psychology Laboratory
The Johns Hopkins University

Accepted for Publication
by CARL MURCHISON

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BOOK NOTES

Identification of Book Reviewers for This Number. Frank B. Williams is Professor of Mathematics in Clark University. William L. Langer is Assistant Professor of History in Clark University. V. Orval Watts is Instructor in Sociology in Clark University. Susanne K. Langer is Mrs. William L. Langer and is a student of Philosophy in Harvard University. Edmund S. Sanford and Carl Murchison are Editors of this journal.

The Child: His Nature and His Needs. A contribution of The Children's Foundation. 1924, 516 p.

Some years ago a great interest was awakened in intellectual circles in this country because of the proposal on the part of some universities to patronize the fine arts. As a result of that idea the University of Michigan invited Mr. Frost to accept a fellowship in fine arts carrying residence at the University. Miami University of Ohio as a result of the same idea invited Mr. MacKaye to the same type of fellowship. That development in American University administration was part of the general movement during the last quarter century to establish research professorships, in that way patronizing the sciences. In Valparaiso, Indiana, during the present year there has appeared under the title of *The Children's Foundation* a distinct patronage on the part of a business man, Mr. Lewis E. Myers, of the wide spread interest in child study. Just how important this patronage will become, what its influence will be, only Mr. Myers and his associates and advisors are in a position to know.

The first act of the Children's Foundation was to gather and publish a large mass of information concerning child life. This information appeared under the above title. The large and handsomely printed book is being distributed by thousands. In addition to the gratuitous distribution of the volumes an opportunity is given for anyone to purchase the volume for one dollar which is approximately one-half the cost of publication.

The book is divided into three parts: first, "the present status of our knowledge of child nature," with contributions by Bird Baldwin, Mary Whitley, Walter Dearborn, Henry Neumann, Frederick Bolton and E. A. Kirkpatrick; second, "the present status of our knowledge of child well-being," with contribu-

tions by H. H. Goddard, William Emerson, William White, C. A. Winslow, William Healy, Arnold Gesell, Leta Hollingworth and Winfield Hall; third, "present status of our knowledge of education," with contributions by John Tigert and M. V. O'Shea. The book carries twenty pages of bibliography and twelve pages of biographical data concerning the contributors. It also carries seventeen pages of well arranged index material.

It should be remembered that the book makes no claim to offer to the world new material or to be the result of new investigation. It is merely an epitome of most of the common information concerning child life,—the founder, Mr. Myers, and the Editor, Dr. O'Shea, being interested in the practical problem of diffusing throughout the community such information as is available concerning child life.

C. M.

Psychological Tests in Business. KORNHAUSER AND KINGSBURY. Chicago, University of Chicago Press, 1924, 194 p.

As the author points out the aim of this book is "to present a simple and impartial book which will enable the reader to arrive at sound conclusions regarding the actual use of psychological tests in the business world and possibilities of future development." The authors are also careful to point out that enthusiasm should not run too high and that one should recognize the limitations and short-comings of any kind of test. The book contains a chapter on the nature of psychological tests and a chapter on methods of constructing psychological tests for business. Then there are chapters on psychological tests for office occupations and also for non-office occupations. The book closes with a discussion of the place of psychological tests in the personnel program and the future of tests in the business world.

The book is sane, well informed and is the best summary concerning the practical use of tests in business that we have. The book is wholly different from the older publications of Link, Hollingworth or Scott. It occupies somewhat the same position in the field of business tests as Pintner's recent book in the field of intelligence testing. We need more work of that general sort in all the fields where attempts are being made to apply the principles of psychology.

C. M.

An Introduction to the Study of the Mind. By WILLIAM A. WHITE. Nervous and Mental Disease Monograph Series. 116 p.

Strange as it may seem it is rather unusual for a psychologist to pick up a book nowadays that pretends to deal with the mind. The word is so seldom used in modern psychology that the average psychologist upon picking up such a title might wonder what it is all about. But this little book is one more contribution from the genial superintendent of St. Elizabeth's Hospital and as one might expect is a brief survey of the methods of psychoanalysis. To be sure it deals with material that one does not often find in psychoanalytic treatises but the analogies are familiar and the methodology well known to all students of Freud. The first part of the book is concerned with the general history of intellectual development. Then the book procedes to a discussion of the genesis of "the wish" both in the race and in the individual. There follow five chapters on mental mechanisms and finally a chapter on the unconscious. There is nothing in the book that the author has not said before. His *Outlines of Psychiatry*, his *Mental Mechanisms* and his *Mental Hygiene of Childhood* contain practically every idea expressed in this book. Probably the author's motive in writing the book was to put the word *mind* into more general use in contemporary psychology.

C. M.

Studies in Mental Deviations. By S. D. PORTEUS. Vineland, N. J. Training School, Department of Reasearch, Vineland, N. J., 1923. 276 p.

This interesting collection of studies by the author and developer of the famous maze tests is, as he himself states, an account of his stewardship as director of research at the Vineland institution. It contains a chapter on Anthropometric Measurements, a chapter on the Development of the Maze Tests, a chapter on Personality Traits and a chapter on Case Histories. There are also chapters dealing with the Binet-Simon Scale and two or three other scales which Dr. Porteus worked with at the Vineland institution. The book is of historic value in that it is a record of the research that was going on at that justly famous institution that is associated with the celebrated work of Dr. Goddard and with the initiation of mental tests in the American army. Now that Dr. Porteus is out of the country,

being associated with the University of Hawaii, it is well for the average reader to remember that the common maze tests were developed by him.

C. M.

Guide to Porteus Maze Test. By S. D. PORTEUS. Vineland, N. J. Training School, Department of Research, Vineland, N. J., 1924. 50 p.

All of us welcome this little guide to the Porteus Maze Test for it gives us in compact form the entire history of the Maze Tests since their initiation in 1914 to the present time. The guide contains full instructions for the giving of the maze tests, for their scoring and for the interpretation of results. As the author points out, the norms for the test are based upon the testing of more than two thousand children and the coefficient of reliability is .95.

C. M.

The Intelligence of College Students. By A. H. MACPHAIL. Baltimore, Warwick & York, Inc., 1924. 176 p.

This book is another example of the growing tendency at the present time to give historical information concerning the use of mental tests. Being similar in this respect to Pintner's *Intelligence Testing* and Kornhauser and Kingsbury's *Psychological Tests in Business;* the book is in two parts, part one being concerned with the current practices in the use of intelligence examinations in college administration. The second part is concerned entirely with the use of intelligence examinations in Brown University. There are four or five pages of conclusions at the end of the book. One of the conclusions is that students who are dismissed from college for poor scholarship or other reasons are, as a group, of inferior intelligence. It is made clear, however, that there are exceptions to this general rule.

C. M.

The Psychology of Accidents and "Symptomatic Actions." By SAMUEL A. TANNENBAUM. The Tenny Press, 1924. 92 p.

This little book is a criticism of the general methods and interpretation used by the Freudians and other psychoanalysts. The book is fully as unfriendly as Dunlap's *Freudianism, Mysticism and Scientific Psychology* but of course is not based upon

so broad a foundation of philosophical and scientific information. However, the book carries a great deal of common sense and independence of thought. Most of the author's criticisms of the Freudian psychology are directed at the Freudian assumption that a possible interpretation is a true interpretation. Certainly the Freudians have shown a tendency to select such interpretations as agree with their fundamental categories and at the same time are possible. Of course it is perfectly obvious that an interpretation may agree with a general theory, be possible and at the same time be perfectly false. The more serious minded Freudians will probably not object to any valid criticism of their methodology.

C. M.

The A B C of Atoms. By BERTRAND RUSSELL. New York, Dutton & Co., 1923. Pp. 162. Price $2.

Can a layman understand what workers on the frontiers of physics and chemistry are trying these days to get at? Let the questioner read this fascinating exposition of Bertrand Russell's and find out that it is quite possible when a man of Russell's knowledge and skill will act as guide. In thirteen short chapters he treats such matters as the Periodic Law, Electrons and Nuclei, The Theory of Quanta, Radioactivity and Relativity in a style which not only holds attention but results in clear ideas. Especially admirable are his care in laying his foundations solidly on what his reader already knows, his use of homely illustrations, his avoidance of needless technical terms and his making clear—which scientific workers themselves do not always succeed in doing—that in these ultimate matters the physicists and chemists are themselves feeling their way.

EDMUND C. SANFORD.

The Depths of the Universe. By GEORGE ELLERY HALE. New York, Charles Scribner's Sons, 1924. Pp. xv + 98. Illustrated. Price $1.50.

This interesting little book is a reprint of three articles by Dr. George Ellery Hale, Honorary Director of the Mt. Wilson Observatory of the Carnegie Institute and one of America's best known astronomers. The articles, which appeared during the last two years in *Scribner's Magazine*, give an account, with sufficient additional matter for proper perspective, of some of

the recent advances in astronomy, no small part of which have been made possible through researches carried out under the direction of Dr. Hale at the Mt. Wilson Observatory and elsewhere. That the articles are authoritative goes without saying. They may safely be recommended to anyone who feels the mystery of the starry heavens and would know more of them.

EDMUND C. SANFORD.

Evolution and Religion. By HENRY F. OSBORN. New York, Charles Scribner's Sons, 1923, pp. viii + 21. Price 75 cents.

This thin little book is a reprint, from the *New York Times* of Sunday, March 5th, 1922, of a reply by Prof. Henry Fairfield Osborn, the well-known paleontologist, to an article by William Jennings Bryan in the same paper a week earlier. Prof. Osborn has no difficulty, of course, in showing that a man may be today both a convinced evolutionist and a devout Christian—as many have been from the days of St. Augustine down—and that no one who will review with an open mind the known facts of biology and geology can avoid becoming an evolutionist of some sort, though not necessarily a strict Darwinian. The earnestness and sincerity of Mr. Bryan are courteously recognized throughout.

EDMUND C. SANFORD.

Reference Studies in Mediæval History (in three parts). By JAMES WESTFALL THOMPSON, PH.D., LITT.D. Parts I and II. XXXVI—229 pp. The University of Chicago Press, Chicago, 1923.

Teachers of history will be grateful to Professor Thompson for making his syllabus of mediæval history (first privately printed in 1907), generally accessible. It will be equally welcome to seriously-minded students who are eager for assistance in continuing their studies in some particular field.

In the very brief preface the author accurately describes the manual as a syllabus of subjects, not of lectures, though it may easily be adapted for use in lecture courses. He points out that "the references range from those of the simpler sort to those of a larger nature," and that "the variety of topics and the graduated nature of the reading material makes flexible use . . . . possible." "It can be used in daily class work, in lecture courses, for oral or written reports, or for quarterly papers."

A careful examination of the syllabus bears out the justice of these claims. It is hardly conceivable that the teacher or student of mediæval history should not find something of value in these pages. The beginner in the field will find the Introduction (dealing with the value and content of mediæval history and with the methods of historical study) very stimulating and extremely helpful. Even the homely truths, the advice regarding the mechanics of historical procedure, based as they are on many years of successful teaching, are decidedly worthwhile.

One of the striking things about this list of references is the broad outlook which the compiler takes. For him mediæval history "is that period of the history of Europe and the Mediterranean countries—Asia Minor, Syria, Palestine, Egypt, Africa,—which is included between the decline of the Roman Empire and the period of the Renaissance in the fifteenth century." This means that he goes back to the age of the Antonines, that he devotes much space to the history of early Christianity, that he regards the Eastern Roman Empire and the Arab Conquests as of equal importance with the story of France or Germany. Indeed, he includes a splendid list of references for the history of the Mongols in Asia and their irruption into Russia.

Even more gratifying is the writer's view of what constitutes history. "All history is not made by kings, nor all wars fought on battlefields," he rightly remarks on page XVIII. Pursuant to this view he has included excellent bibliographies on the economic and social life of imperial Rome, on the conflict of early Christianity with the later paganism, on the history of the Roman and Canon Laws, on the historiography of the Middle Ages, on trade and trade routes, on social facts and forces (not omitting such subjects as cookery and meals, amusements, chess, playing cards, etc.) on the Rise of the Universities, on the introduction of Arabic culture, on mediæval literature, etc. For many of these topics it would be extremely difficult for the student to find adequate reading lists, and their inclusion here serves greatly to enhance the value of the manual.

The individual lists leave very little to be desired. No attempt has been made to include books in foreign languages, though references to reviews of the more important ones are frequently given. On the other hand, the author, recognizing the necessity of acquainting the student with original sources, has taken great pains to list all such material that has been

translated into English. Another unique feature is the wealth of periodical literature cited. Of six references to the Catacombs, for example, only one is to a book, the others being to periodicals. It is just this type of material that is most difficult to trace, and the references to it in this manual would alone make the book a labor-saving device. Almost the only objection one might raise is that the date of pubilcations is uniformly omitted, and that occasionally periodicals are cited without the author's name or the title of the article. This defect should be corrected, if possible, in a later edition, for it is obvious that much may depend on the date of publication, while the investigation of nameless articles might prove a waste of time. It is also desirable that some indication of the comparative value of the works listed should be given by the use of asterisks or otherwise.

But these are minor points. Taken by and large one can speak of this book only in terms of the highest praise. It is a work which no student of mediæval history can afford to overlook. Would that some day the fields of ancient and modern history might be equally well cared for!

WILLIAM L. LANGER.

Modern European History. A General Sketch, 1492-1924. By W. F. REDDAWAY, M.A. IV + 312 pp., 8 vo. New York, and London, Longmans, Green & Co., 1924.

There is certainly a need for a "general sketch" of European history since the discovery of the New World, provided the book is of small compass, written on broad lines, emphasizing the leading movements and suggesting the general trend of development. But the volume at hand, in spite of the attractive title, can hardly be said to meet these requirements. Mr. Redaway's conception of history is a very restricted one, and would be called antiquated by most teachers of the subject. His book is not concerned with cultural or social developments. Indeed, he does not stop to consider even the most important economic changes. One can hardly call it as much as a political history, for the author lays very little stress upon the history of political ideas. The book is, in fact, little more than a chronology of diplomatic and military events, an old-fashioned text-book of the kind we had thought had gone by forever.

Even so, the author has not succeeded in making his volume readable. He has tried to include all facts of importance with the result that he has produced a mere catalog of names and dates. The book decidedly lacks breadth of view and the statements of fact are almost uniformly inadequate in motivation. A book of this kind cannot possibly leave a lasting impression either on the student or on the general reader. One has the constant feeling that the author is in a hurry and that he is unwilling to omit anything. In addition it may be said that the arrangement of the material is not very satisfactory. It seems unreasonable that in a book of 300 pages 50 should be devoted to the Wars of Religion (1560-1648), while the years from 1846 to 1924 are dismissed in 55. At times one wonders whether the writer really intends to register more than international intrigue and clashes of arms. There are several pages devoted to the wars of Charles X of Sweden, while no serious attempt is made to explain the constitutional development of England, the political struggles in France after 1789 or the problems connected with the growth and expansion of Russia.

It would be useless to multiply examples illustrative of the shortcomings of the book. In extenuation one may say that Mr. Reddaway has essayed the impossible. At any rate, he has tried to be detached and impartial. In the very sketchy account of the origins of the past war he at least shows himself free from the blind prejudice of some other textbooks writers who have covered the same field, though it may be said that at times he takes refuge in ambiguous phrases and discreet omissions. As for the ten pages dealing with the years since 1918, it would perhaps be more charitable to say nothing. A Ranke or a Lord Acton might have devoted them to a few brilliant generalizations, but Mr. Reddaway's few scattered paragraphs of data on the Eastern Question, the Russian Question, Dislocated Exchanges, the Settlement of Europe, France and Germany, the League of Nations, and Italy and Greece are so pathetically inadequate that they hardly merit discussion.

WILLIAM L. LANGER.

Social Life and Institutions. By JOSEPH K. HART. New York, The World Book Company, 1924. 420 p.

This little book would be highly suggestive as an elementary textbook in sociology in high schools, normal schools, or junior colleges. It describes the organization of society, outlines very

briefly the trend of past development, and calls attention to a great number of the problems of modern social life, together with the chief proposed solutions.

The treatment is for the most part impersonal, but the author's viewpoint appears occasionally. The goal of social effort is described for the individual as the "normal life," which demands "more complete education" and "desires the realization of the good, the true, and the beautiful," (p. 408). For society the tendency is toward the "development of a more rounded community life," (p. 409), and again it seems to be toward "social democracy," (p. 401). His condemnation of production for profit rather than for service, (p. 101), his complaint that workingmen are now "bound by modern industry to the wheels of complicated machines" as the slaves were bound to human masters or serfs to the land (p. 379), and that since the Industrial Revolution "so-called 'economic forces' tend to grind them down," (p. 258), and his statement that "economic freedom is still to be achieved," (p. 383), that is, "freedom to work under conditions which the workers will help to control" (ibid), illustrate his attitude on economic questions.

Because of the wide field covered the author is able to present little factual or illustrative material which would not be already familiar to the intelligent student. He makes little attempt, moreover, to discover general principles, or to formulate a social philosophy, his aim being primarily to awaken the interest and stimulate the activity of the student, (p. 413-415).

Such a book has its dangers as well as its uses, and its value as a textbook would depend largely on the ability of the individual instructor in leading class discussions, and upon his knowledge and understanding of the principles of sociology.

V. Orval Watts.

Foundations of Educational Sociology. By C. C. Peters. New York, Macmillan Co., 1924. 440 p.

Professor Peters in his "Foundations of Educational Sociology" has made a valuable contribution to the fields of sociology and education. He discusses the function and methods of education in the light of the principles of sociology, and considers in what respects modern education should, and can be, remodelled in order that it may better achieve its two co-ordinate objectives, group solidarity and individual efficiency. He deals, not only with education in the narrow sense of institu-

tionalized education, but also with the educational functions of other social institutions such as the home, the church, the theatre, and so on.

The book is refreshing for its clarity, its sane viewpoint, and for its formulation of a coherent body of principles which are in keeping with the accepted doctrines of modern biology, psychology and economics. One of its most noteworthy features is its outline and illustration of methods for quantitatively controlled research which should form the basis for a scientific construction of curricula.

This work should win a high place among the manuals in thorough courses in education. The educator should be acquainted with this study of the principles and methods by which educational practice should be shaped, and the sociologist will find it a valuable reference for its treatment of education, in the broadest sense of the term, as a means of social control.

V. Orval Watts.

The Teaching of Mathematics. By J. W. A. Young. New York, Longmans, Green & Co., 1924. 200 p.

Teachers and superintendents and especially teachers of mathematics will be much interested in the new edition (1924) of *The Teaching of Mathematics in the Elementary and the Secondary School* by Dr. J. W. A. Young.

Those familiar with the old edition will be especially interested in the excellent addition of about one hundred pages on "Developments in the Teaching of Mathematics in the Period 1913-1923," with its comments on the "Great Army Test" and other tests and the lessons to be learned from them; here also is given a splendid resumé of the work of the National Committee in Dr. Young's well-known thorough manner.

The book should be on the table of every new teacher of Mathematics for constant reference and on the reference shelf of other teachers and superintendents and all others interested in good Pedagogy.

Frank B. Williams.

Modern Mathematics—Seventh School Year. Schloring and Clark. Yonkers-on-Hudson, World Book Company, 1924. 200 p.

For several years we have been calling for text-books in Elementary Mathematics that would fit into the life of the

modern child and would satisfy the known principles of modern Psychology and Pedagogy so that the child would get some "fun" out of his work.

In the *Modern Mathematics* series by Schloring and Clark, the seventh year of which is before me, I believe that the authors have succeeded most admirably. The book has been built up slowly in the proper way, by *trying it out in the class room;* excellent geometric material is included and much valuable training in the affairs of life is given without introducing unusual technical terms. An excellent feature is the "score card" method for checking one's knowledge and the "self-tests" for progress. It is well worth a try-out in any school.

FRANK B. WILLIAMS.

Women and Leisure. A Study of Social Waste. By LORINE PRUETTE, PH.D. With an introduction by Harry Elmer Barnes. Pp. xxiv + 220. New York, E. P. Dutton Co., 1924.

The title of Dr. Pruette's book is rather suggestive of an essay composed of general reflections, the personal reactions of a thinking woman to a vague social situation; in this respect it is misleading, although *Women and Leisure* is exactly descriptive of her subject. The volume is a scholarly piece of work, in a field where little true scholarship has yet been applied. Its sociological data are statistics and its psychological material is collected at first hand. The chapter entitled "Day Dreams of the Adolescent Girl" is itself a table of valuable introspective reports.

This book deals with the average woman, not the inspired poetess or pioneer spirit. It is frank and unromantic and true, giving one a pathetic sense of human—not necessarily feminine—mediocrity. It treats of the great rank and file of humanity without idealization or trite optimism. Dr. Pruette is not afraid to say that "as a matter of fact the ambitious man or woman is a rarity," and that "if the usual factory worker is already engaged in work which utilizes all the creative impulse which he may have, . . . there is no call for the *intelligentsia* to grow sentimental over the monotony of that work." But without regret or far-fetched justifications, she accepts people as they are, and seeks for a solution of one particular problem they represent, namely how to make married women spend their leisure in a useful fashion. Their leisure, the result of "modern con-

veniences," is at present simply wasted. She realizes that "one of the functions of the 'leisure class' is usually considered to be tending the lamp of culture," but adds honestly that it is not being tended as one might expect as a result of all the newly created leisure. The fact is that women are not fully occupied in the home, and the author suggests that (1) men should cease to bind their wives to the house for convention's sake, because it *used to* furnish a full time job, and that (2) employers of stenographers, accountants, etc., should get used to the idea of employing two women on part time as readily as one on full time, especially as the efficiency of such workers is increased by shorter hours.

There are plenty of difficulties in the way of Dr. Pruette's solutions, such as for instance the case of the mother who is perfectly at leisure, perhaps for many hours, while her children play in the yard, but who cannot desert the house in that time. Yet the author has achieved a great deal in presenting the problem scientifically, giving us the actual situation to contemplate. For one class of women at least, whom she describes as the patrons of "the 'movie', the casual shopping the object of which is not to buy but to see, the tea-party and the gossip-fest," her plea is certainly a strong and relevant one. Perhaps the greatest value of the book, as a contribution to Sociology, lies in the fact that it is truly concerned with the average human being—as Schopenhauer has fitly described it, "that factory-product of nature." It takes a certain high courage to contemplate us thus collectively, and a sentimental unwillingness to see the commonplace has frustrated many possible social adjustments. Dr. Pruette has both the courage and the insight to study a real social situation and point out its dangers, with a hint of future developments in our time-honored customs and sentiments.

SUSANNE K. LANGER.

Social Psychology. By FLOYD HENRY ALLPORT. Boston, Houghton, Mifflin Co., 1924. pp. 453.

Here is a book which offers little succor to the followers of Bosenquet and others who think idealistically of social behavior and its causes; which dismisses in a paragraph the claims and organic interpretations of that long line of thinkers including Herder, Lessing, Comte, Spencer, and Dewey; refers very slightly to the rationalistic schemes of anarchy, socialism, and

as the representatives of all that is false in social psychology general reform which extend all the way back to Plato; attacks the exponents of the group-mind theory; and supports with an energy and consistency rarely met with the mechanistic interpretation of social behavior,—a type of interpretation made famous centuries ago by Thomas Hobbes, and since that time kept to the forefront by Marx, Buckle, Tarde, Bagehot, Giddings, and others. His definition of social psychology, "social psychology is the science which studies the behavior of the individual in so far as his behavior stimulates other individuals, or is itself a reaction to their behavior; and which describes the consciousness of the individual in so far as it is a consciousness of social objects and social reactions," is a definition which he consistently holds to throughout his book, but is a definition so broad and all-inclusive as practically not to omit the subject matter of any field of psychology. The simplest facts of perception as they are studies in individual psychology can easily be included in the above definition of social psychology. Of course it is quite likely that Dr. Allport intends for that to be the case. If he does so intend then the only difference between individual psychology and social psychology is the difference in perspective.

Dr. Allport's criticisms directed against the Group-Mind theory are quite likely merited by the exponents of that theory but he passes too lightly over the qualifications which these exponents themselves are very careful to make. I do not see how Dr. Allport could quarrel with the following statement by McDougall on page 2 of his "Group Mind," 1920: "I conceive Group Psychology to be a part only, though a very large part, of the total field of Social Psychology; for, while the former has to deal only with the life of groups, the latter has also to describe and account for the influence of the group on the growth and activities of the individual."

Dr. Allport proves his determination to be consistent by including five entire chapters, 130 pages, that he could easily place in an elementary text-book on individual psychology. These chapters include all of Part I, The Individual In His Social Aspects. These chapters are concerned with the nervous system, instincts, habit, feeling and emotion, and personality.

But who has ever seen a nervous system functioning socially? The writings of Head and others have during the last very few years destroyed nearly all our old ideas about the nervous system. It is a precarious foundation for social psychology. If

the idea of interaction is so necessary, it might be better to draw on physics for the illustrative material. How can one quarrel with those who deal with the dissection of groups,—and then commit the same fallacy in regard to the individual?

The second part, Social Behavior, deals with social stimulation in the form of language and other expressions, and with responses to such stimulation in the group, the crowd, in society, etc.

The book is well planned and well executed. But the author has not made use of the wealth of material concerning the extent to which individuals *differ* from one another. Neither has he made use of the vast material concerning similarity of social customs in spite of those individual differences. When one considers individuals only, social philosophers seem to be engaged in dreams and delusions. But when one considers the origin, development, and disintegration through centuries of time of some historical social group, the study of individuals seems equally futile. So we can expect the mechanists and the group-mind exponents to continue equally indignant at and intolerant of one another's ideals.

C. M.

How to Study: Some Suggestions for College Students. By ARTHUR W. KORNHAUSER. Chicago, University of Chicago Press, 1924. Pp. 43.

This helpful booklet was prepared especially for freshmen in the School of Commerce and Administration of the University of Chicago, where its contents have been put to practical test for several years, but should prove useful for college and high school students of any subject. The author very properly points out that rules for study are successful only when they are applied and no rules can help the student who does not himself desire to study.

E. C. S.

A Present-day Conception of Mental Disorders. By CHARLES MACFIE CAMPBELL, M.D. No. 12 of the Harvard Health Talks. Cambridge, Harvard University Press, 1924. Pp. 54.

That Dr. Campbell makes an admirable statement of the conception of mental disease now held by the best psychiatrists goes, of course, without saying. When, however, he raises the further question, as he does in his summary (p. 52), "Of what

use is such a lecture to the laity," the reviewer cannot help wondering whether the helpfulness of the lecture would not have been greater if the lecturer had been at less pains to exploit the minor forms of mental trouble and had given more space to the fact (which is mentioned indeed but rather incidentally) that the insane are not a strange species but simply sick people —a fact that the laity is especially slow to grasp—and to the hopeful aspects of mental hygiene.

E. C. S.

AUTHORS INDEX

William H. Burnham
G. Stanley Hall 105-107

J. Crosby Chapman
Persistence, Success and Speed in a Mental Task . . 276-284

Edna A. Collamore
An Analysis of a First Grade Group 170-175

Edmund S. Conklin
A Genetic Scheme for the Classification of Personalities . 316-332

Hazel E. Cooper
Correlation of the Grades in Practice Teaching Received by Seniors in a College for Teachers, with their Scores in the Thurstone Group Intelligence Test . . 176-182

Violet H. Foster and Henry H. Goddard
The Ohio Literacy Test 340-351

Joseph C. Gainsburg
Fundamental Issues in Evaluation Composition . . . 55-77

Henry H. Goddard and Violet H. Foster
The Ohio Literacy Test 340-351

Alice Minnie Herts Heniger
The Spoken Drama Versus "The Movies" for Children 388-398

Herman Hilmer
The Outlook for Civilization 247-267

James Quinter Holsopple
Spurious Correlations in Psychology 399-404

Mary Cover Jones
A Laboratory Study of Fear: The Case of Peter . . 308-315

Ellen A. Maher
Moral and Social Development of the Six Year Old Child 268-275

H. F. Martin
Methods of Teaching in College Classes 285-293

Margaret S. McGill
Prevention of the Misfits 49-54

CHARLES BEN MINNER
The Question of Higher Education for the Blind . . 359-387

DAVID MITCHELL
Psychological Examination of Pre-School Age Children 108-146

CARL MURCHISON
The Intelligence of White Foreign Born Criminals . . 297-307

GARRY C. MYERS
An Experimental Study in Patterns of Thought . . 352-358

GARRY C. MYERS
Some Whys of Whims 78-83

H. B. REED
Repetition and Association in Learning 147-154

ALBERTINE A. RICHARDS-NASH
The Psychology of Superior Children 209-246

G. SERGI
On the Reform of the Italian Universities 336-339

MORGAN C. STURTEVANT
The Virgin Birth 183-193

PERCIVAL M. SYMONDS
Personal Habits 156-169

LOVISA C. WAGONER
A Note on the Grasping Reflex 333-335

KIMBALL YOUNG
The History of Mental Testing 1-48

BOOK NOTES 84-104, 194-207, 293-296, 405-420

SUBJECT INDEX

Accidents, mental causes of 93
—and symptomatic actions 408
Adams, Samuel 89
America faces the future 198
American college, society magazine 92
—education, twenty-five years of 202
—literature, classic studies in 203
—nights entertainment 207
—spirit, Howard Pyle's book of 97
Association and Repetition in learning 146-155
Atoms, A B C of 409

Backbone: the development of character 104
Bible, the story of 99
Birth Control. What is it? 101
—of Psyche 97
Blind, question of higher education for 359-387
Book about myself 96
Burlesques, book of 207

Causes and consequences 90
Child, giving best chance 295
—mind and common branches 205
—nature and needs 405
—unstable, interpretation of psychopathy 296
Children's stories, how to tell 205
Christianity and social science 88
Civilization. outlook for 247-267
College classes, methods of teaching 285-292
College students, intelligence of 408
Coming generation, claims of 201
Coming Renaissance 86
Conscious faculties, evolution of 95
Correlation of grades in practice teaching with scores in Thurstone test 176-182
Coué for children 205
Criminals, the intelligence of white foreign born 297-307
Cures 203

Das literansche verstandnis der werktatigen jugend zwischen 14, 18, 202
Deeper voice 94
Democracy, co-operative 84
—irresistible movement of 97
Depths of universe 407
Deutsche versuchsschulen der gegenwart und ihre probleme 293

Economic liberty 202
Economics, elementary principles of 93
Educational sociology, foundations of 414
Education, on the firing line in 100
—, then and now in 203
European history, modern 412
Europe, malady of 85
—since 1918 104
Evaluating composition, fundamental issues in 55-77
Evolution and religion 410

Fear: laboratory study of: the case of Peter 308-315
First grade group, analysis of 170-175
Freedom and growth 86
From Augustus to Augustine 93
From immigrant to inventor 103

Genetic scheme, for classification of personalities 316-322
Genius, the 103
Gifted children, education of 294
Girl, unadjusted 201
Golden bough: study in magic and religion 91
Grasping reflex, a note on 333-335

Hall, G. Stanley 105-107
Harris, Joel Chandler, life and letters of 202
Health Land, journey to 295
Heidede: eine neue liebe 101
Hellenism and Christianity 87
Heretic of Soana 197
Home and community life 91

Individual, recreating of the 97
Insanity, psychology of 206
Intelligence, human effciency and levels of 196
—of white foreign born criminals 297-307
—testing, methods and results 201
Italian universities, reform of 336-339

Jesus, the Christ, life and teaching of 94

Language, its nature, development and origin 204
Laughter and comedy, psychology of 195
Life, aberrations of 99
Living God, the 207
Long journey, Vol. 1, fire and ice 102

Man, the coming of 204
Mankind at the crossroads 98
Mathematics, modern, seventh school year 415
Medieval history, reference studies in 410
Mental task, persistence, success and speed in 276-284
Mental testing, history of 1-48
Mind, introduction to the study of 407
Misfits, prevention of 49-54
Monogamy, plea for 196
Moral and social development of the six year old child 268-275

Negro school attendance in Delaware 94
New democracy, and man 199
New psychology and the teacher 201

Ohio literacy test 340-351

Parties and party leaders 206
Patterns of thought, experimental study 352-358
Personal habits 156-169
Personality and social adjustment 199
Personality, foundations of 195
Personalities, genetic scheme for classification of 316-322
Personnel, management, principles and point of view 103
Persistence, success and speed in a mental task 276-284
Phantom 197
Phillistine and genius 100
Philosophy, field of 89
—, of education, source book 103
Philosophy, modern French 85
Plots and personalities 94
Porteus maze test, guide to 408
Post mortem 206
Present-day conception of mental disorders 419
Psychic health of Jesus 194
Pre-School age children, psychological examination of 108-146
Principles of advertising 98
Psychology and primitive culture 200
—for students of education 204
—experiments in 200
—foundations of 196
—general 92
—introduction to 203
Psychological Retrospect of the Great War 96
Psychological test in business 406

Race and national solidarity 89
Religion, birth and growth of 204
—, origin and evolution of 199
Religious and social problems of the Orient 95
—education of Protestants in an American Commonwealth 198

Rejuvenation: how Steinach makes people young 98
Repetition and association in learning 146-155
Revolt of youth 99
Russia, my disillusionment in 205

School, law and freedom in 199
Schoolmaster, great, the story of 194
Science, new decalogue of 87
Six year old child, moral and social development 268-275
Social life and institutions 413
Social mind, control of 102
Social psychology 204
Social psychology 417
Society, psychology of 88
Sociology, elementary 93
Soul of women 100
Spoken drama versus movies for children 388-398
Spurious correlations in psychology 399-404
Stories from an early world 202
—, how to write 90
Study, how to; some suggestions for college students 419
Studies in mental deviations 407
Substance and function and Einstein's theory of relativity 96
Superior children, psychology of 209-246

Teachers, lectures to 95
Teaching of Mathematics 415
Test material, complete outfit of 104
Towards international justice 206
Triumph of unarmed forces 206

Virgin birth, the 183-193

Western mind, making of the 102
Whims, some whys of—genetic study 78-83
Will-Temperament and its testing 104
Women and leisure 416

Youth and the race 200

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WILLIAM H. BURNHAM, PH. D.

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AND WITH THE CO-OPERATION OF

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MARCH, 1924

THE HISTORY OF MENTAL TESTING
By KIMBALL YOUNG 1

PREVENTION OF THE MISFITS
By MARGARET S. MCGILL 49

FUNDAMENTAL ISSUES IN EVALUATING COMPOSITION
By JOSEPH C. GAINSBURG 55

SOME WHYS OF WHIMS—A GENETIC STUDY
By GARRY CLEVELAND MYERS 78

BOOK NOTES 84

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JUNE, 1924

G. STANLEY HALL 105

PSYCHOLOGICAL EXAMINATION OF PRE-SCHOOL AGE CHILDREN
By DAVID MITCHELL 108

REPETITION AND ASSOCIATION IN LEARNING
By H. B. REED 147

PERSONAL HABITS
By PERCIVAL M. SYMONDS 156

AN ANALYSIS OF A FIRST GRADE GROUP
By EDNA A. COLLAMORE 170

CORRELATION OF THE GRADES IN PRACTICE TEACHING RECEIVED BY SENIORS IN A COLLEGE FOR TEACHERS, WITH THEIR SCORES IN THE THURSTONE GROUP INTELLIGENCE TEST
By HAZEL E. COOPER 176

THE VIRGIN BIRTH 183

BOOK NOTES 194

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SEPTEMBER, 1924

THE PSYCHOLOGY OF SUPERIOR CHILDREN
By ALBERTINE A. RICHARDS-NASH 209

THE OUTLOOK FOR CIVILIZATION
By HERMANN HILMER 247

MORAL AND SOCIAL DEVELOPMENT OF THE SIX-YEAR-OLD CHILD
By ELLEN A. MAHER 268

PERSISTENCE, SUCCESS AND SPEED IN A MENTAL TASK
By J. CROSBY CHAPMAN 276

METHODS OF TEACHING IN COLLEGE CLASSES
By H. F. MARTIN 285

BOOK NOTES 293

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and

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Announcement

The Pedagogical Seminary now becomes The Pedagogical Seminary and Journal of Genetic Psychology. To its editorial board have been invited former students of G. Stanley Hall and other psychologists representing the genetic point of view, all of whom are interested in the method of research for which this journal will be one medium of publication. There are no honorary members of this editorial board. All are active and each editor attaches his own name to whatever he endorses for these pages. The journal will be greatly enlarged but will retain its high quality and cosmopolitanism. Even the book reviews will be signed, frank and as little perfunctory as possible. The journal will continue to be published quarterly. Index and title page bound in December number.

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